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EDUCATIONAL METHOD

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EDUCATIONAL METHOD

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EDUCATIONAL METHOD

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CREATIVE EDUCATION[1]

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The subject of my address is Creative Education. I want to present for your consideration some of my ideas on this very old topic, given a resurrection and modern emphasis by such men as Hughes Mearns, whose books, *Creative Youth* and *Creative Power*, have been widely read. To make for directness and definiteness I shall raise and answer certain questions.

1. What is education?

Modern educational philosophy recognizes and accepts a definition of education growing out of the biological sciences, which have obtained increased influence in the past fifty years. One of the best of these statements is given by the late Professor Alexander Inglis of Harvard in the opening paragraph of his book on *The Principles of Secondary Education*, thus: "Reduced to its lowest terms, education is the process of producing, directing, and preventing changes in human beings." This definition assumes that education makes an individual different from what he was before the exposure, causes him to modify his ways of thinking, acting, behaving, and that guidance in making these changes constitutes the real job of education.

2. What are creative changes?

When one thinks of education as "the process of producing, directing, and preventing changes in human beings," he must think of *creative education* as the process of producing and directing *creative changes* in individuals. It would seem, therefore, that any adequate consideration of the subject must begin with an interpretation of creative changes. Recently I presented to a number of individuals interested in education—a biologist, a psychologist, a sociologist, a mathematician, a historian, and a physicist—this question: What are creative changes? Each person defined them in terms of his particular subject, but underlying all replies there were two points of agreement. First, creative changes are those which the individual can use to reconstruct his subsequent experience—a thought analogous to that of Dewey, who says that creative changes are those which the individual can use in the reconstruction or reorganization of his experience so as to make it more meaningful and to increase his ability to direct its subsequent course. Second, creative changes in the present and future must grow out of a creative past experience, signifying that

[1] Address delivered to the Administrative Staff of the Pasadena City Schools, December 9, 1930.

the best guarantee of a creative future experience is a creative past experience to which is added a creative present experience.

3. What is a creative act?

In order to discover what is a creative past or present experience one must define and analyze a creative act. There are two standards for delimiting a creative act. One is known as the sociological standard, best stated by Hughes Mearns, who says that "a creative act is one recognized by competent individuals as outstanding." The focus of attention is the end point or finished product and the point of view is that of the adult. Let me illustrate. A man is a portrait painter. Thousands of individuals have painted portraits before him, but there is something in his technique that gives better line, color, organization, expression, so that a group of outstanding specialists in his field pronounce his products the best of their type or kind. The same is true of architecture. There are certain buildings recognized by experts as being outstanding in beauty, such as the Taj Mahal. There are creative artists, playwrights, chemists, inventors, musicians, lawyers, poets, novelists, dramatists. Their products are superior to any which have been known before, since those who are most competent to judge agree that it is so.

The use of the sociological standard for evaluating a creative act is open to two serious objections. First, it eliminates all possibility of creative acts among children, since they could not produce, with rare exceptions, finished products recognized as outstanding by a group of adult experts. In primitive society such a situation might not have existed. When civilization was simple, individuals matured early, the period of infancy was short, education was integrated with life, almost any real idea of any individual could be translated into a creative act judged by all of the existing standards of the adult social order. With a complex civilization, a long period of infancy, education apart from life, real ideas produced by older and more mature individuals, after formal education has ceased, large numbers of techniques and specific training necessary for the proper externalization of ideas, the possibility that youth may reach or exceed standards for a creative act set by the experts in the adult social order are exceedingly remote, if not impossible. Second, in any cross-section of the total population in our present social order only a few individuals can expect to perform creative acts. There has been only one Plato, one Lincoln, one Einstein, and one Christ. Our present civilization is suffering from a dearth of creative leadership in all walks of life. To accept a sociological standard would tend to make even more difficult the possibility for creative acts to emerge from a group of children, while encouragement to more creative effort is very much needed.

There is another standard for judging the creative act. This is known as the psychological standard, under which major emphasis is placed upon the relationship of the product to the previous experience of the individual. A creative act is any act which represents for the creator a new thought, a new idea, a new solution, a new analysis, or a new synthesis. Let me illustrate. Either by his own initiative or by direction of the teacher a pupil is confronted by a genuine problem. This is different from any other problem which he has ever experienced, since genuine problems never recur in toto, only in parts. They contain some old elements and some new and unforeseen factors. Utilizing such old patterns or parts of patterns as are pertinent, the pupil adds new facts, new concepts, new techniques, and reaches a new solution, meaning, understanding, or interpretation which he has never before

recognized in exactly that form. In the light of his previous experience this solution represents a distinct growth or advance in insight into technique and power consciously to reach conclusions which are as sound as the age and maturity of the individual seem to warrant. This act, then, is a creative act, even though the product may be exceedingly amateurish in relation to adult standards.

If the psychological standard for the creative act is accepted, every individual has an opportunity to create, because he can usually produce something that is new or superior to any of his previous performances. He can always remake old experiences into dynamic new experiences. By this standard of measurement, a child with a 70 I.Q. can be creative in relation to his own ability, experience, and techniques. In some types of acts he may even exceed in quality the performance of a child with an I.Q. of 120. There may be creative idiots as well as creative geniuses. Furthermore, this interpretation of creative education is synonymous with real education, that is, education in which the learner purposes, plans, executes, and judges his educational experience. Contrariwise, it is not synonymous with an education which gavages the individual, leaving nothing to his selection and direction, thus offering no opportunity for integrating past and present experience.

4. What are the characteristics of a creative past experience?

There are many important characteristics of creative past experience. I shall not present these perhaps in the order of importance, but in the order of ease of discussion. The first is that the experience must be broad, must have range, must cover a wide area, must have scope. In so far as possible with the age and maturity of the individual it must be as comprehensive as life itself, not adult life, but the life of the learner. In order to create, the individual must have a rich past experience with which he can associate new present experiences. From the combination of the two, he can produce new ideas, meanings, associations, and syntheses. With a barren past experience the individual lacks sensitiveness to present experience, thus laying a meager foundation for the present and the future. As life becomes more complex, moves more rapidly, and the area of civilization increases, the number of kinds of new experiences to be faced by boys and girls becomes infinitely increased, indicating the need of breadth and richness in present educational experience. This concept of a broad experience is, of course, contrary to present educational practices where the essence of the achievements of the race has been concentrated in academic subjects, organized logically, assigned by sections to grades, and too often given to the learner as medicine is administered to an ill or refractory individual.

A second characteristic of experience is that it must be deep, exhaustive, thoroughly explored, pursued until the law of diminishing returns begins to operate due to lack of materials or ideas. It must furnish a real challenge to the imaginative, emotional, and intellectual abilities of the individual. This does not mean that common experience will have the same depth for all individuals. On the contrary, it will be governed by individual differences in readiness and capacity. Too many of the so-called activity experiences now widely advocated lack the intellectual challenge so necessary to give them depth.

Thirdly, creative experience is full of meanings, concepts, generalizations, ideas, interpretations, since these are potent in the reconstruction of past experience into new experience. They are the bridge between the old and the new. Through them

the learner sees a new world and shapes his subsequent experiences accordingly. Let me illustrate. Last summer I read one of Chesterton's books called *The Incredulity of Father Brown.* This is a compilation of a number of short mystery stories in which Father Brown, a retired clericus, was the unraveling hero. One of these stories, called "The Arrow from Heaven," depicts a rich banker who had come into possession of a gold cup by some mysterious and alleged foul means, for which reason his life was continually in danger. Living in a castle which was closely guarded and under constant surveillance, he felt himself to be secure. But one of his peculiarities was to examine the cup each afternoon. One summer day, while doing this before an open window, he was mysteriously shot to death with an arrow. Regular detectives concluded that the arrow was shot by someone in an airplane or in a tower at the opposite end of the grounds. Not so Father Brown. After examining all the evidence, he said, "You detectives don't realize one thing. Ordinarily an arrow is shot from a bow, but it is equally possible to use it as a dagger. This murder was committed from within the house." And so the great mystery was solved.

Fourthly, creative experience is integrated experience. It is selected, organized, and synthesized into a usable, workable whole. Non-creative experience is uncritical, compartmentalized, unorganized, and non-usable. The processes of integration are subjective, peculiar to the individual who is doing the integrating. They are not uniform or objective, and consequently must be controlled by the learner and not by the teacher. The latter can only guide, direct, offer suggestions. He cannot hand out ready-made patterns to be accepted and applied in toto to all new experiences. Rather, the pattern must be formed by the learner, the guiding factor in the process being his dynamic purpose or drive. The satisfaction of this purpose becomes such a force that it colors the whole life of the individual, who through selecting, organizing, synthesizing around the end sees his purpose consummated. But the attainment of one purpose by satisfying means always projects new stimuli, new purposes, each in turn producing its own progressive transformation. Thus the process of learning and life goes on. Let me illustrate how integration takes place. Suppose you have an impelling desire to go to Japan. Immediately the drive from that desire begins to affect your activities. You talk with friends who have been to Japan. You write to railroad and steamship companies about transportation facilities. You consult with travel bureaus concerning their offerings. You read books about Japan. You visit exhibits of Japanese art. You examine your bank account critically. You make long arithmetical computations which have been foreign to your experience for some months, and perhaps years. In other words, your whole life is colored by this purpose and your experiences are selected, organized, and integrated around it.

Fifthly, creative experience must have height. It must lead on to new concepts, ideas, purposes, organizations, integrations of a higher order. Experience that does not lead on is almost entirely lost. This should not be confused with the formation of habits when the individual consciously relegates certain experiences to the lower brain mechanisms in order that he may thereby save time for the acquisition of more meaningful experiences. The experience, mentioned above, of preparing for and actually making a visit to Japan, leads to a desire for new experiences. These may be added information covering any number of phases of Japanese life, such as art, music, literature, economic or educa-

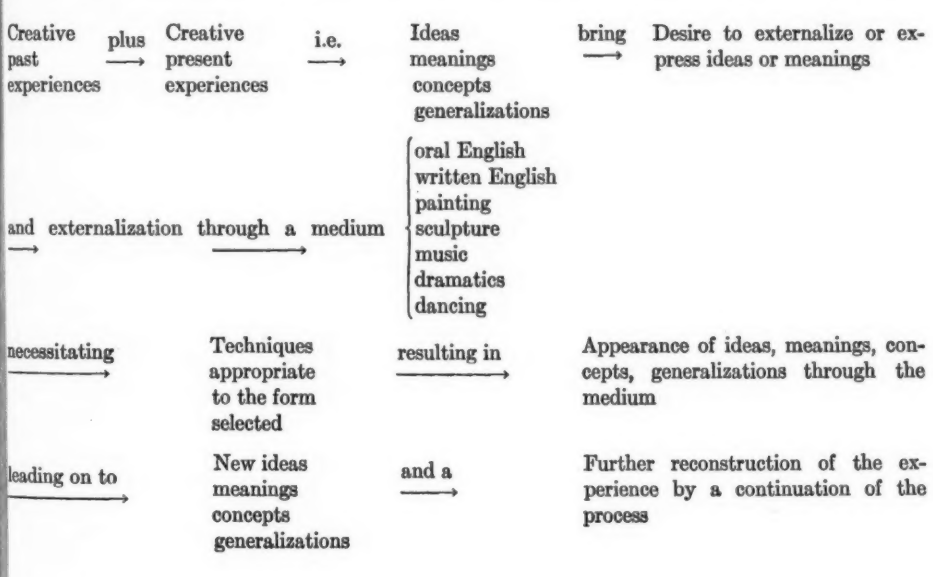
tional systems. They may be a desire to visit countries representing all types of civilization of which Japan is the first unit. Any experience which does not lead to bigger and better purposes, desires, attitudes does not have the requisite quality of height and does not offer opportunity for subsequent creative power.

Finally, creative experiences must include those techniques which are essential to the building of area, depth, height, integration, and to the satisfactory consummation of the purpose. Such techniques are not ends in themselves but only means to an end. They should be taught preferably at the time when they are needed to satisfy a particular purpose. The use of old techniques in new situations should be stressed. Great emphasis should be given to techniques which are met frequently and which have wide areas of possible service. To create without technique is wellnigh impossible; to create with technique is equally difficult, except as the individual is governed by a dynamic purpose to the attainment of which the technique assists.

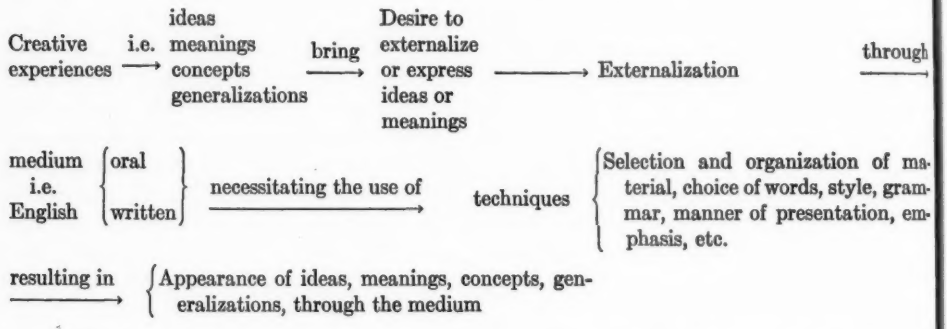
5. What is the histology of the creative act?

When the creative act of an individual is analyzed in detail for its origin the picture becomes as shown below.

Out of a creative past and present experience the individual derives ideas, meanings, concepts which he wishes to externalize or express. He chooses a medium which is best for the idea or in which he has the greatest fund of technique. At this point he needs the best possible skill in order to convey his idea. The observer, reader, or listener who examines the result should have reproduced in him emotionally or intellectually the idea which the creator attempted to convey. If this be the case, the creator has been successful in his idea, his medium, and his technique. Sometimes an idea is not accepted by the recipient because it is a poor idea, the medium is badly selected, or the technique is poor. On the other hand, the idea may be superfine, the medium superior, and the technique excellent but the result entirely ineffective, since the recipient may not possess the back-



ground of creative experience out of which the idea of the creator was formulated. Mere knowledge of technique cannot bridge the gap and make up for lack of real experience. In the same way no amount of experience will overcome handicaps due to lack of technique in the expression of ideas. However, it should be thoroughly understood that ideas are the product of well-selected experience, not the product of techniques. The relationship of ideas and techniques may be expressed by the following:



6. What type of curriculum best promotes creative education?

A curriculum for creative education should grow out of the immediate interests, desires, purposes, and needs of the learner. This is fundamental to the utilization of the basic emotional drives of children. But immediate interests are of two types, cursory or transitory and abiding or genuine, and the real curriculum must grow out of the abiding and genuine rather than the cursory and transitory type. Through the curriculum the school must aid the individual in exploring, making more meaningful, and raising to higher levels experiences which have the greatest possibilities for desirable area, depth, and "leading-onness" into the permanent and abiding racial experiences as they relate to his present social needs. Since experiences of children do not occur in the ordinary subject categories which are the foundations of the present school curriculum, it is evident that all subject matter boundaries must be removed. This does not mean that all subject matter in the present curriculum will be rejected. However, only such parts of it as are valuable in giving the desirable three dimensions of the experiences of children will be retained, since subject matter has no justification as an end in itself, but only as it functions in relation to some well-defined need. Furthermore, this experience of children must be explored in a social situation in which a number of children take part, since all three factors of area, depth, and height are conditioned to a very large degree by the stimulation, critical analysis, direction, and encouragement from the group as a whole.

Experience, however, cannot be dealt with directly. It is too broad, general, vague, and indefinite. The content of experience is as broad as life itself, whereas the subject matter of a subject can be defined within reasonable limits and withdrawn from the area of its competitors. The whole experience must be carefully examined as to its present and probable future values. It must be analyzed also to determine the presence of the characteristic elements in creative experience which have been explained above. For purposes of ad-

ministration and assurance that the experience will meet the tests of breadth, depth, and height, the curriculum will be called the unit of work curriculum, each unit of which should be divided into a number of types of activities, of which the following represent a workable classification:

1. *Orienting activities.* These are direct experience activities for the purpose of giving area to and testing the soundness of the interest. If the unit of work is on Indian life, this activity may include visits to a museum, the site of an old Indian village, or an Indian pottery shop.
2. *Building activities.* These would include building a canoe or an Indian village, weaving Indian rugs, making Indian pottery. Building activities are means of reconstructing the direct experiences of the Indians themselves. Since it is impossible for boys and girls to be Indians and live through the experiences of the Red Man, they can only rebuild his activities in the light of the best evidence as to how he lived.
3. *Research activities.* These are undertaken by the group or by individuals in an attempt to answer definite questions which are raised as the unit of work progresses. These activities usually involve reading in reference and other source books, and the building of techniques in selecting and organizing information. They give depth to the interest and offer opportunity of providing for individual differences.
4. *Group discussion activities.* Through group discussion the form of the experience or unit of work is shaped, the results of the orienting activities are evaluated, and reports concerning research activities are presented and considered. The general progress of the experience is discussed and plans for further development are laid. This activity is fundamental in promoting a number of the characteristics of creative experience mentioned above.
5. *Creative activities.* Each individual child has time when he can express his ideas for the sheer joy of expression, apart from their relationship to the general trend of the unit or their utilitarian value to the group. The expression of these ideas may take any form which the individual wishes to select. These activities usually grow out of the unit and are generally expressed in media with which the individual is familiar.
6. *Appreciative activities.* In a unit on Indian life, boys and girls should come to appreciate the real merits of the Indian civilization and the sterling characteristics of the people. Their vigorous manhood, ideals of home life, tribal solidarity, artistic pottery, symbolic weaving are all cultural values transmitted to posterity.
7. *Experimental activities.* Children of all ages are interested in experiments. They like to manipulate materials and see what happens. When two guinea pigs are given different diets, one vitamin sufficient and the other vitamin deficient, and are weighed regularly, the children obtain an insight into the effect of diet on growth which is more lasting than that obtained from books. The experimental activities give variety, area, depth, and height to the unit.
8. *Drill or practice activities.* These include a training in the techniques necessary to effective participation in the other types of activities described. They may include skills in reading, writing, spelling, arithmetic, reading music, etching, carpentry, weaving, or any other which seems to be pertinent to the effective development of the experience.
9. *Culminating activities.* As the name implies, these bring the unit to a close. They typify the viewpoint of the children as to what the experience has really meant to them. These are usually expressed as a group, through some form of dramatic activity, although individual expressions in other forms are often received.

Any unit of work based upon child interest offers possibility for whole-hearted participation of all children in the nine different types of activities enumerated and will probably encompass the essential elements for a creative experience, provided, of course, the utilization of these activities in the development of the experience is controlled to a large extent by the pupils and shaped to meet their unfolding purposes under the leadership of the teacher. All children should participate in all types of activities, so that the area of exposure is constant. Individual differences should be provided for in depth and height within each of the nine types of activities mentioned. There should be no attempt in any of the activities to make growth constant for all by setting minimum standards which children must meet, or hurdles which they must jump in order to be considered passable or successful. Instead, teachers should encourage, should watch for the smoke that indicates an incipient spark which may be fanned into a flame.

Creative education is built upon a faith of the individual in himself, a confidence in his ability to do well, and a buoyant hope, the yeast of the past experiences and the zest of the present, leading to new purposes, new meanings, new insights, new skills, and new integrations. Every child a creator? Why not!

EDUCATIONAL EXPLOITATION OF ERRORS[1]

BENJAMIN C. GRUENBERG

The Viking Press, New York City

To err is said to be human.

To forgive and forget, to let bygones be bygones, is rated a stage or two higher.

How shall we scale the capture and utilization of errors?

Obviously errors may be exploited in at least two radically different ways. We may take advantage of the mistakes that other people make, to their undoing and to our gain; that, too, is more or less human. Or we may use the blunders for what we may call an "educational" end, to nobody's hurt; and that is at least not inhuman.

The ability to learn, which is one of the outstanding traits of the species, rests directly upon the ability to make mistakes. This does not mean, of course, that those who make the most or the worst blunders are necessarily learning the most; it means merely that learning is made both possible and necessary because the primary and spontaneous responses of human beings are inadequate for a satisfactory meeting of situations. Indeed, we constantly assume, both in our management of practical affairs and in our psychological research, that adjustment is something to be progressively attained, and that it is attained through the so-called trial-and-error process. The committing of errors of various kinds is therefore a normal part of the child's life. In the classroom, whether we are concerned with the acquisition of skills or with the acquisition of knowledge, we must expect errors, inaccuracies, blunders, misunderstandings, as a matter of course. Patience and humor, which are so highly praised as valuable in the make-up of a teacher, are important because they play a role in the teacher's reaction to these normal deviations from ideal or perfect responses.

It is easy enough to manifest humor and patience in the presence of blunders that do not affect us immediately. Practically all of us laugh at the blunders of other people's children, other teacher's pupils. This is no doubt due in part at least to a certain emotional effect upon the ego: other people's mistakes, at the moment they are recognized as such, necessarily exalt our feeling of superiority. We can afford to sneer at the ignorance betrayed by one who confuses the name of a cheese with the name of a painter, both Italian; or we may share with our colleagues the flattering unction administered by the beautiful but dumb young lady who tells us solemnly that she understood every word of Einstein, but not a single sentence. We know better, and for the time being that is as good as being wiser, or richer, or more powerful—the ego is expanded and we laugh.

The situation created by blunders is radically different if they come from our own students or our own children. In such cases we have to share with the dumb-bell some of the implied stupidity or ignominy. In the immediate setting at the place of origin, blunders do frequently try our patience, and seldom come within hailing distance of our humor. Within the confines of the classroom, for example, we usually maintain the attitude expressed by

[1] Read before Section Q, Education, American Association for the Advancement of Science, Cleveland, December, 1930.

the reproach, "You didn't understand what I said." In the secret chambers of the soul we assume the attitude expressed by the apology, "I did not make clear to you what I meant." Naturally, we resent being placed in the more humble position, and we shift to the other the blame for the blunder, rather than accept it as a reproach to our own technical incompetence.

In view of the prevailing modes in teacher-pupil and classroom set-up, it must be acknowledged in passing that many of the blunders indicate defects in organization, classification, grading of material and other administrative details, rather than incompetence on the part of the teacher, or even of the pupil. Generally speaking, however, it would seem desirable to get those in the position of teaching others to rid themselves, so far as possible, of the tendency to resent the impeachment inherent in the learners' blunders, and that without cultivating indifference to the outcome of their efforts. To the end of obtaining such objectivity toward blunders it may be of help to attempt an analysis of certain types of blunders, in search of their sources and their significance from the point of view of the erring ones.

The material used consists of published collections of "Howlers," as they are called in England, and of similar "gems" kindly furnished by some eighty-odd teachers in this country, for a collection published under the title, *Boners*.[2] There have been omitted numerous examples that are not above suspicion. We occasionally find a howler that sounds more like a "wise crack," such as this one from a church school:

> The Puritans were a bunch of Protestants that made an extra page of history for us to learn.

And we sometimes find one that is too good to be true, or that raises the suspicion that a teacher with a healthy sense of humor retouched the original just enough to improve upon "nature":

> A politician is a man who stands because he wants a seat and is expected to lie.
> There are a few well-known Scotch poets alive, but few of them write free verse.
> Extravagance is wearing a tie when you have got a beard.

Although students do occasionally offer wise cracks, or give answers colored by resentment, exhibitionism, or some other emotional element supposedly foreign to the spirit of scholarship and research, in general it seems reasonable to assume that the answers are originally given in good faith and properly indicate what the student really thinks or understands in the premises.

Several hundred of these blunders were classified according to the apparent source of the error, into seven main groups, which may be roughly designated as follows: (1) similarity of words; (2) false inferences; (3) crossed wires; (4) divergent backgrounds; (5) literal-mindedness; (6) rhetorical difficulties; (7) neuroses and mixed motives.

I

One is rather astonished to find reported relatively few blunders arising from words of double meaning, although there are some. For example, in reply to the question, "What three animals are peculiar to the frigid zone?" came the reply, "The lion, giraffe, and elephant would be peculiar in the frigid zone." The pupil was sufficiently well informed on his geography and his faunistics; but *peculiar* meant to him and to his teacher two different things.

By far the most frequent blunders, and the most easily comprehended, arise from

[2] Since this was written there have appeared two more volumes, *More Boners* and *Still More Boners*. The Viking Press. $1.00 each.

the similarity of words having different meanings. Similarities in sound, including of course cadence or physiognomy of words and phrases, give rise to curious substitutions, with accompanying perversions of thought. The boy who defined "senator" as a being half man and half horse was not indulging in cynical reflections upon our political institutions and personalities; he was an English boy who had been taught his classical mythology. Things learned early often present passive obstacles to what is taught later. Some examples of these resistances to new words and concepts will illustrate the process:

A sextant shows people to their places in church.
The Pyramids are a range of mountains between France and Spain.
Virgil was the mother of Christ.
Acrimony, sometimes called holy, is another name for marriage.
Barbarians are things put into bicycle wheels to make them run smoothly.

Sometimes strange and outlandish words impress because of their difficulty and are seized upon so avidly that they fairly bristle their hostility against potential intruders:

A Soviet is a cloth used by waiters in hotels; or
A Soviet is what middle-class people use to wipe the mouth.
Amongst the Islands of the West Indies are the Pyjamas, noted for their toilet sponges.
A grasshopper passes through all the life stages from infancy to adultery.
A mosquito is a child of black and white parents.

The "menagerie lion running around the earth" has become a classic example of a childish substitution of familiar words for strange ones, without apparent interference with the cortical processes supposed to be the concomitants of "thinking." There are hundreds of examples of fearful and wonderful transformations undergone by phrases out of songs and hymns during their passage from the ear of a child to the mouth: "We can sing full though we be" is not the vainglorious boast of football celebrators, but a simple and sincere rendering of "Weak and sinful though we be" as heard in a Sunday school. "Gladly, the cross-eyed bear" ("Gladly the Cross I'd bear") has been famous for at least a generation. A redefinition of genius as "an infinite capacity for picking brains" may reflect merely upon the enunciation of the teacher; whereas faulty speech may be suspected in the pupil who defined "false doctrine" as "when a doctor gives a man the wrong medicine."

Similarities in the *appearance* of words present difficulties to inexperienced readers. Inasmuch as the pupil is commonly left to himself in his struggle with the printed page, the teacher is more likely to blame him for getting things "wrong" and to attribute his blunders to "carelessness." Whether or not improved techniques in teaching children to read will dry up the source of these blunders we cannot foretell, but it should be helpful to parents as well as to teachers to know that the imps of confusion lurk behind every infrequent syllable, or even behind the less frequently used letters of the alphabet. As one boy wrote, the chief use of Zebra is to illustrate the letter Z. With that in mind we can perhaps understand this type of blunder:

Kodak is the bible of the mahomedans.
Gray wrote "Energy in a country churchyard."
Ali Baba means being away when the crime was committed.
Louis XVI was gelatined during the French Revolution.
In the days of Joseph the Egyptians gave refuse to the Israelites.

Focus is like mushrooms . . . but it is poisonous.
Extempore is a disease in dogs.
Molecule is a girlish boy. (This is perhaps Theodore Roosevelt's only contribution to the physical sciences.)

II

A second class of errors arises from the teaching tradition which makes it appear better policy, on the part of the pupil, to hazard a guess than to say simply and honestly, "I don't know." Among the examples given, there may be some that represent the pupil unaware of his ignorance; in any case the mental process seems to be that of deductive inference, and logical enough even if the conclusions are "false." To supply "spice" as the plural of "spouse" may count as an error, but it is in harmony with the spirit of Anglo-Saxon tradition, especially as this is in the process of being absorbed by a child of foreign parentage. Three groups of examples are offered.

The first has to do with direct inference from the context or from common knowledge:

Margaret of Anjou was fat; she was one of Henry's stoutest supporters.
Brussels is famous for its carpets and its sprouts.
Grit is given to fowls to make them heavy so they can't fly away.
A grass widow is the wife of a dead vegetarian.
Henry VIII was cruel to Anne Boleyn and ironed her ("he pressed his suit on her," the book said).

The formation of diminutives, feminine endings, and other verbal modifications supply a second group:

The diminutive of man is mankind.
Chaplets are small places of worship.
A buttress is a woman who makes butter.
The female of manager is managerie.
A brunette is a small bear. (This includes an element of faulty pronunciation.)

Inferences based upon etymology range from the obvious, if false, to the far-fetched, if plausible:

The *coroner* is the man who crowns the king.
An *anglophile* is one who loves fishing.
Equivocal means equal alto and treble voices.
The cat leaped about and then sat on its *posterity*.
Rhinoceros is called rind because of its skin and nocer because of its nose.
Sepulchre: "se" negative; "pulcher" fair; a place where beauty fades.

III

I have designated as "crossed wires" those cases that indicate a body of ideas associated with a word or phrase, which is, however, easily detached and shunted off to a different body with which there is no direct relation. It is an extension of the confusion of terms to the point of inferring or elaborating connotations. It is impressive to note, for example, how frequently Joan of Arc is set up in relation to Noah, both in this country and in England; or how frequently the expression "Papal Bull" brings a cow into the picture. The Maid of Orleans has been described as the wife or sister of Noah, and characterized as an important participant in the latter's adventures, even by children who placed her in France, or knew that she "was canonized by Mr. Shaw." The following are illustrations of some of the more simple crossings:

A glazier is a man who runs down mountains.
The highest peak in the Alps is Blanc Mange.
Common nouns are abstract and cement.
If you have any vacancies go at once to the dentist.

In a medieval mystery play the person guilty of murder is not discovered until the final curtain.
The Mediterranean and the Red Sea are connected by the sewage canal.

An echo of some of the emotional stirrings that followed the war may be caught in this historical note which associates profits with evil: "Cassandra was a Trojan profiteer." Possibly, however, the pupil merely telescoped *prophet* and *seer* by means of the more familiar word.

More complex are the confusions in the following examples:

A Cabal was a ministry to place wireless telegraphy.
The guilds were the ancestors of the trade unions, but now only old women go there to sew.
Some men started to build the Erie Canal and the mosquitoes broke out and many of them died.
Celibacy is the crime a priest commits when he marries.

Some children seem to have a genius for jumping off the track, not at each switch, but at the end of each rail:

Therms are microbes which enter *gas meters* and set up rapid *consumption*.

Apparently *therms* can switch toward thermometers and calories as readily as toward germs and disease; a *gas meter* will pass for a *calorimeter*, especially if one is not familiar with either; and *rapid* may as reasonably introduce *consumption* as *combustion*. Another multiple contact switch is suggested in this, apparently from a pupil with a more "literary" background:

Esau was a man who wrote fables and sold his copyright for a mess of potash.

From such cases we may ourselves infer why it is that teachers sometimes say to the pupils, "Don't think!" And we know what they mean.

An interesting combination of logical inference with a misunderstood term is this:

Martin Luther died a horrible death. He was excommunicated by a bull.

IV

The influence of previous experience as it determines the "apperceptive" basis for further learning is commonly recognized, but is usually disregarded in teaching except where teachers take pains to "prepare" for specific instruction. The disregarded background, however, is far from inert, and sometimes asserts itself in ways that are startling or amusing. How could any teacher, for example, be on his guard against this outcome of his teaching: "The first book of the Bible is Guinessis"? Truly, the children of the advertising industry are wiser in their generation than those of pedagogy.

The prevailing customs of a community or neighborhood, or the common concerns, emerge in the two definitions of *lockout* from different parts of London:

A lockout is a man who comes home too late.
A lockout is like a strike, only it lasts longer.

What people do and think about liquor seeps down, so to say, into the attitudes of the children:

A temperate zone is where no one drinks too much.
Doldrums are army rum rations.

Where could this have originated except in a region in which rum and doles are both familiar?

Our observations, our inferences, and our modes of expression, all are influenced by previous experience:

On one side of a penny is the King's head, on the other side a young lady riding a bicycle; they call her Ruby Tanyer.

Solomon was fond of animals because he had 300 purcupines.

When St. Paul revisited his churches (wrote a Girl Guide), on his first visit he enrolled many Christians, and on his second he appointed patrol leaders.

V

Until he has been repeatedly thwarted by minds that are wholly literal, the teacher does not ordinarily realize the extent to which all of our language is figurative. Even in teaching history and sciences, where we are ostensibly concerned with "facts," we are creating difficulties for our pupils because we mean more than our words say, or something different. The definition of "transparent," for instance, as "something you can look through," would ordinarily pass muster; but when the teacher calls for an example, the pupil submits: "like a key-hole." What is one to do then?

In reply to the examination question, "How would you make soft water hard?" came the advice, "Freeze it." The teacher may say, truthfully enough, that the pupil failed to learn the special meanings of the words "hard" and "soft" as applied to water; but the school trustee might also say that the teacher had failed to get the idea across before proceeding on the assumption that the pupil did know those technical meanings. In reply to the question, "Why does true English history begin with Henry VII?" came the matter-of-fact statement, "Because up to this time it was all lies."

A few more examples of this stark facing of realities may help to reveal the processes involved:

A papal bull is a male cow belonging to the pope.

Out of sight out of mind means, invisible and insane.

The Minister of War is the clergyman who preaches to the soldiers in the barracks.

The mechanical advantage of a long pump handle is that you can get somebody to help you pump.

The main feeders of the Amazon and Orinoco rivers are alligators.

Wolsey's fate is attributed to his having shot the Pope. (This is not far-fetched, in view of the statement in the book: "aimed at the Papacy.")

Julius Caesar was renowned for his great strength; he threw a bridge across the Rhine.

From poetry we should expect more difficulties for the literal-minded:

When Achilles heard the sad news he pulled out his hair and put on dust instead.

"Boys to guide the plough and pen" was taken to mean "boys to plough and look after the fowls."

"The lark that soars on dewy wing" means that the lark was going so high and flapping his wings so hard that he broke into perspiration.

Certainly it cannot be said that the literal-minded lack imagination; they merely miss what the other person's imagination intended. Paraphrasing "O God of Battles, steel my soldiers' hearts, and possess them not with fear," yielded "O Mars, rob my soldiers of their hearts, and don't be afraid to keep them."

Nor is literal-mindedness a simple matter of *level* of intelligence, as the annoyed teacher is likely to assume. It takes both intelligence and courage to criticize the Immortal William, even when they happen to be linked with ignorance that credits him beyond his deserts:

"The child is father to the man." This was written by Shakespeare. He often made this kind of mistake.

And it takes some degree of intelligence to make meaning out of Shakespeare, in whose writings it does not always lie upon the surface:

> "And doth not Brutus bootless kneel?" means Brutus knelt without his boots on. "Would he were fatter." These words were spoken by Brutus' wife when he was going about half-naked and worried and hardly ate any food.

VI

There is a large group of blunders that may be attributed to the pupil's rhetorical difficulties: he knows what he means but cannot express himself adequately. To say that a teacher, to be popular with his pupils, "must be fair inside and out" certainly suggests a variety of ideas; but there is nothing the matter with the pupil's meaning. Or when one says of algebraic symbols that they "are used when you don't know what you are talking about."

Simple displacement of qualifying clauses often produces humorous results:

> My brother was kicked because he was wicked in the seat of his pants.
> Children have hook worm in the tropical regions.

Teachers should by all means do what they can to improve the pupil's skill in expression, but such errors should arouse neither ridicule nor reproach. "That looks like the sick neighbor next door's dog," is indeed an awkward expression. Such expressions should be treated, however, as we want the pupils to treat figures of speech, which they resemble in many essential respects. One pupil defined a figure of speech as "a way of talking or writing by which you say what you don't mean, yet mean what you say." In the following examples we have to recognize a certain ingenuity and resourcefulness in meeting language difficulties:

> A widow is a wife without a man.
> Rhubarb is a kind of celery gone bloodshot.
> When a crab wants to go forward he goes sideways.
> Ambiguity means telling the truth when you don't mean it.
> An axiom is a thing that is so visible that it is not necessary to see it.

Difficulty in formulating the thought is sometimes compounded by a confusion of concepts, as in the following, where crime is identified with a sojourn in jail:

> Many people are in Gaol for committing suicide while under the influence of drink.

VII

In the examples that have been designated as "crossed wires," we find some that call for a considerable amount of analysis. It often happens, however, that a pupil writes a sentence or a series of seemingly unrelated sentences that try the teacher's patience because they are not relieved by humor. In such cases those who have to read examination papers written by strangers, where the personal identification with the pupils' failure is eliminated, are annoyed because they cannot make any sense out of the writing; the work is crazy, or at least we are unable to understand what the writer had in mind. There is apparently at work some source of confusion, or each of a series of words diverts the train of thought into new channels, destroying the unity of the total reaction. One student, for example, enumerates the principal parts of the eye as "the pupil, the moat, and the beam." We can forgive him the misspelling of mote, for we have no difficulty in tracing his associations. If he had been turned aside by the appearance of the word "moat" on his paper, and passed on to drawbridge and portcullis, we should have suspected his intelligence or his sanity; but the mechanism is

of precisely the same nature even if it does not carry one so far. How are we to get at the meaning of the pupil who wrote the following?

> A Fugue is what you get in a room full of people when all the windows and doors are shut.

Does *Fugue* hark back to some vaguely remembered dissertation on *Fatigue*? Or is the statement a manifestation of *Fog* in the child's mind?

The fusing of two ideas because their names have elements in common is just what we mean when we speak of confusion:

> "Many ships used Calcutta as a coaling station; hence the term, 'Black Hole of Calcutta.'"

The opposite effect results when a term suggests two (or perhaps more) discrete or incompatible ideas. "When Achilles was born his mother plunged him into the Stynx"; so far, the historic truth, as learned, with but a slight verbal error; but note what happens next: "and that made him intolerable."

The crazy writing is probably analogous in many cases to the "artificial neuroses" produced in Pavlov's laboratory. When a dog has been thoroughly conditioned to respond in a definite way to stimulus A, and in a totally different way to stimulus B, what happens upon the simultaneous presentation of both stimuli, or upon the presentation of the two in rapid alternation? The dog barks or whines and shows other signs of distress. The reaction of a human being under analogous conditions is described as "panic" or "confused," or, in extreme cases, "crazy." The incoherence of the student's foolish writing may result literally from conflicting pulls.

By what possible line of reasoning could a child identify a brass-buttoned door attendant at the movies with a "connoisseur"? The word *picture* furnishes the clue, the only familiar word that to the child has always been associated with "connoisseur" and a word that to him has always meant the cinema.

In Pavlov's experiments the disorientation was sometimes brought about by a unitary but ambiguous stimulus. For example, if the two discrete stimuli were a circle and an ellipse, the disturbance could be set up by a disk flatter than the original circle and rounder than the ellipse. Even intelligent adults, outside of school, have been confused by an ambiguous remark.

From the educational point of view it is a commonplace that the teacher should analyze pupils' blunders, for the purpose of discovering his own shortcomings as well as the students'! In practice it is often difficult to do this precisely because the manifestations of our own shortcomings tend to destroy our objectivity. For these reasons teachers are likely to find very helpful, as well as entertaining, a study of the blunders made by other teachers' pupils. Such a study may do more, however, than reveal the sources of particular errors and point to a prevention of their repetition. It may bring us to look with more detachment upon the passing show, and to accept the making of mistakes as a normal and permanent part of human behavior. It may enable us to meet blunders without reproach and so liberate the children, and others with whom we have to deal, from the constant fear and self-deprecation which reproach always induces, where it does not evoke defiance. We may thus learn, indeed, that it is possible to be as serious as our calling and our responsibilities demand, without being solemn.

ADMINISTRATION OF JANITORIAL SERVICE

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Physical environment is one of the most important factors in the health of the child. Clean schools are more healthful.

TO THE PRINCIPAL:

The principal of each school is the board's responsible executive officer for all activities taking place at the building, and for the building itself. It is, therefore, his responsibility to see that the janitor is informed of, and complies with, the instructions outlined in this manual. In other words, if it is necessary the principal shall interpret each clause and explain it to the janitorial-engineering employees in his building. The principal should see that his employees are thoroughly familiar with "Rules and Regulations"; then there can be no excuse for unsatisfactory cleaning, heating, and ventilating. The principal should be concerned with the following:

1. General operation of the plant.
2. Comfort of pupils and teachers.
3. Safety of pupils and teachers.
4. Care of school property.
5. Conformity to "Rules and Regulations."

QUALIFICATIONS OF THE JANITOR:

A janitor shall have good health and a wholesome appearance.

He shall be industrious, dependable, tactful, courteous, and of clean habits.

He shall have the necessary organizing ability and possess sufficient education to take care of reports, inventories, etc., with proper respect for public property.

He shall be able to read, write, and speak the English language.

He shall be clean and neat in appearance. This is a decided asset, and the janitor who takes pride in his personal appearance will find his reward in the prompt reaction of the children in their endeavor to follow the example he sets.

He shall not be addicted to the use of intoxicating liquors.

He shall have a knowledge of heating, ventilation, sanitation, and general housekeeping.

He shall have sufficient knowledge and experience in the use, operation, and care of the mechanical equipment used for the heating, ventilating, lighting, and cleaning of the school building to insure the Board of Education against damage to school property or health of teachers and pupils.

He shall not be under the age of 21 or over the age of —— years.

A janitor must satisfy the Board of Education that he has sufficient education, training, and experience to carry on the work and that his physical condition and age are such that it will enable him to do his work satisfactorily. Janitors are subject to the general supervision of the superintendent and the more direct supervision of the principal.

The janitor, like the teacher, is a community employee. He must get along with pupils, teachers, principals, and patrons. A good janitor likes his work and takes an interest in it. He does not think of his tasks as hard and disagreeable, but gets real satisfaction out of having well-ventilated rooms, uniform heat, and clean floors. He realizes that he is an important cog in the educational machinery and secures real,

joy in seeing his work done to the best interest of his school. He is kind and attentive to the little children, and is ever careful of his conduct. His speech is clean and his character is such that there is no room for criticism. There are certain qualities which help materially in getting along with other people.

The first of these is *good cheer*. No one feels unusually friendly toward a "grouch." Adults avoid him. Children delight in annoying him. Some janitors are typical grouches. They draw the corners of their mouths so low that they can be tied in bowknots under their chins. *The good janitor is not a grouch.* He gets along well with principals, pupils, teachers, and parents. He is *willing to take suggestions* from those in authority, and is *eager to learn new methods that will improve the quality of his work.* He realizes that his job is to keep the building clean, heated, and ventilated. On the other hand, the successful janitor can smile always and greet folks with a cheerful salutation. Such a janitor is welcome. His service is sought. His counsel is heeded.

Second: Some janitors take the attitude that everyone else is contrary save themselves. No method is worth while unless it is being used by them. Some janitors are likely to be out of sympathy in any lectures or extension study for janitors because they believe that they already know all there is to the janitor's job. But *the janitor who gets along with other folks welcomes new ideas.* He is constantly trying to learn something new and useful. He takes pride in the fact that he is an authority when it comes to the cleaning and heating problems of his building. He wishes to get ahead, so he studies good books and literature dealing with janitorial problems. He applies the things learned and experiments until he knows the best way.

A third essential is the ability to pay attention to one's own business. A janitor remains neutral. He *does not repeat gossip,* nor *comment publicly about school situations.* His job is to keep the building clean, heated, and ventilated. He does not wait until he is told. He sees what is to be done, and when the task is finished he hunts something else. He knows there are not enough hours in the day to do all that should be done, and for that reason he strives to make every minute useful.

Lastly, there is a fortune in good appearance. Nothing begets success more quickly than a good appearance. There are janitors who always look neat. Their faces are shaved daily, their clothes are clean, their hands are clean, and their speech is clean. They are careful of their personal appearance. They should look neat at all times. When doing work that is dirty, they have old clothes to slip on. They cannot hold the respect of their associates when they appear unkempt.

HOURS AND ATTENDANCE:

Section 1. Opening Hour: The Chief-Janitor-Engineer and other employees regularly engaged in the operation and maintenance of school buildings and grounds shall report for daily duty early enough to have their respective buildings properly conditioned for school.

Section 2. Closing Hour: Janitor-engineering employees in charge of buildings shall not absent themselves from school premises during school hours without the principal's consent, nor shall they close their buildings before their regular daily duties are completed.

Section 3. Inspection Before Closing: Before closing, the Chief-Janitor-Engineer shall visit each room to see that:

1. All pupils and teachers are gone.
2. All lights are out.
3. All fires are safe.

4. All windows and openings are closed.
5. All outside doors are locked.

Section 4. Extra-School Activities: The Chief-Janitor-Engineer shall be in attendance at all regular school activities, and shall receive no compensation for attendance. He and the necessary assistants shall receive due compensation for all activities not connected with the school. The principal shall decide when there is any doubt as to whether the janitor-engineering employees shall receive pay.

Section 5. Extreme Cold Weather: When the weather is extremely cold, engineers and janitors shall spend such extra time as necessary to maintain proper temperatures.

Section 6. Daily Inspection: The janitor shall inspect the building daily to see that everything is in proper order.

Noon Hour. The janitor shall plan his midday lunch in such a way that he will be in the building during the noon hour and shall report any disturbances, evidence of rowdyism, destruction of property, etc.

TOOLS AND SUPPLIES:

Section 1. Standard Tools: The following tools and supplies which are furnished by the Central Office shall be kept on hand and used as standard equipment:

Floor brush
Counter brush
Hopper brush
Sanitary closet brush
Mop bucket
Plumber's friend
Coal shovel
Dust pan
Galvanized iron pails
Scrubbing mops and brushes
Floor brooms
Sanitary dusters
Cleaning cloths
Putty knife
Pliers
Screwdrivers
Standard cleaner
Wringer pails

Other tools and supplies will be furnished as they are needed.

TOOL ROOM OR CABINET:

Section 1. Purpose: Each Chief-Janitor-Engineer shall have a room or cabinet which can be locked. The purpose of this room or cabinet is to provide a definite place for the orderly storage of all janitor's tools and supplies.

Section 2. Location: The tool room or cabinet shall be in such a place as to afford the janitor the greatest convenience in the use and storage of his tools and supplies.

Section 3. Lending Tools: No tools or school property of any description are to be removed from the school premises by anyone without permission.

GENERAL DUTIES:

The general duties of janitors are to provide for the physical comforts of pupils and teachers in furnishing them with sufficient heat and proper ventilation; to make minor repairs about the building and its equipment; to coöperate with teachers in their requests for assistance in the line of janitorial service.

Building fires. In extremely cold weather it is not advisable to let fires go out entirely and force furnaces on the following morning up to the required heat. Brick buildings cool rapidly and heat slowly, and when furnaces are forced, materials are heated too quickly, resulting in injury to equipment. Fires, if not continued over the week-end, should be built on Sunday of sufficient temperature to prevent plumbing from freezing and building from becoming unduly cold.

Operation directions. Each janitor shall have posted in fire room complete directions for operation of plant and each valve,

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etc., labeled so as to designate its proper use.

Exits. All outside doors and doors leading to exits must be kept in perfect operation at all times so that small children can leave the building without difficulty in opening doors. Where doors do not function properly, they should be reported at once. Doors or parts of doors should not be hooked so as to remain closed and if, in an emergency, this becomes necessary they should be unhooked and open during school hours. Janitors are to assume responsibility in checking exits.

CLEANING:

1. *Sweeping:*

   a. Materials and Equipment:

      Sweeping shall be done with a sweeping compound and floor brushes or floor mop. Each sweeper should carry a counter brush for chalk trays, under radiators, shelves, and for places inaccessible to the floor brush. A sufficient amount of sweeping compound must always be used when sweeping, regardless of floor treatment used. (This is a state law.)

   b. Frequency:

      (1) Classrooms, special rooms, toilets, rest rooms, and offices must be swept *daily* after pupils are dismissed.

      (2) Corridors, stairways, and entrances shall be swept at least *twice daily* or oftener, depending on the amount of traffic, the weather, and the conditions of the ground adjacent. This sweeping may be done, if necessary, during school hours when pupils are in classrooms. *Do not allow dirt to collect in corners or under furniture, etc.*

      (3) Gymnasium, after each day's use. Walks approaching entrances should be swept daily.

2. *Dusting.* All dusting shall be done with a wool duster oiled to catch and hold dust and dirt. Wash dust cloth frequently.

   a. *Classrooms* must be completed at least one-half hour before opening of school. Classrooms and special rooms, offices, etc., should be dusted daily, after sufficient time has elapsed to allow the dust to settle thoroughly and before the rooms are again occupied.

   b. *Furniture.* Desks, tables, chairs, rails, chalk trays, windowsills, bookcases, pianos, shelves, casts, and any other type of furniture shall be dusted daily.

   c. *Woodwork.* Doors, blackboard railing, radiators, lights, window casings, door frames, and baseboards shall be dusted weekly, on Saturdays.

   d. *Walls and ceiling* shall be dusted twice yearly, on Saturdays, and during vacation periods.

   e. *Miscellaneous.* Pictures, window shades (if not washable), lights, and globes shall be dusted as needed.

3. *Scrubbing and Mopping Floors:*

   a. Frequency. Oiled floors shall be scrubbed with soap and water, or with cleaning compounds and water, and immediately oiled again, allowing only time sufficient for wood to dry between scrubbing and oiling.

      (1) *Classroom floors* shall be oiled three times per year—summer

vacation, Christmas recess, Spring recess.

(2) *Corridor floors* shall be cleaned and oiled once each month. During rainy weather, entrances and connecting corridors and stairways shall be mopped daily and in some cases twice daily.

(3) *Kindergarten floors:*

(a) Wood — mopped twice weekly or more.

(b) Linoleum—should not be scrubbed or mopped with soap and water as this is injurious. A liquid cleaner should be used. Should be cleaned twice weekly or oftener.

(4) *Domestic Science room* should be mopped weekly.

4. *Cleaning of Windows and Other Glass:*

a. Windows shall be washed on the outside and inside at least three times per year.

b. Glass in pictures, electric light fixtures, skylights, etc., shall be washed three times a year.

Note: Windows and other glass may be washed during school hours *where such work will not interfere with the work conducted in the classroom.*

5. *Drinking Fountains, Sinks, Lavatories.* Shall be scrubbed daily with detergent or some equally effective abrasive cleaner. When lavatories are used excessively, such cleaning should be done twice a day. *Toilets.* Surfaces should be scrubbed with disinfectant solution twice a week; bowls, at least weekly.

6. *Disinfecting.* A disinfecting solution should be used in all mop and scrub water. Urinals and toilets should be treated with a disinfectant solution. Spray disinfectant solution in fan room so it is carried to all parts of building—weekly or oftener if needed. This should be done when school is not in session.

7. *Blackboards*—washed twice a week. *Erasers* should be cleaned daily, out of doors or in front of a flue door, never in classroom. They should not be cleaned on outside brickwork of school.

HEATING AND VENTILATING:

1. Coal should not be dumped on the floor in front of furnaces. No coal or ash dust should be allowed on the floor of furnace room.

2. Attention should be given furnaces every half hour during the firing period, beginning early enough to have the building up to temperature (68 to 70 degrees) when children arrive—*about one-half hour before school begins.* While it may be difficult at times to maintain rooms constantly at this temperature without some variation, temperature should be maintained at this point as far as possible, and any extreme variation should be reported at once to the janitor, who shall endeavor to correct this condition. He shall not under any circumstances proceed to *raise the heat unduly* because a teacher requests more heat.

3. *Humidity.* Janitors shall keep water in pans above furnaces to temper air going to classrooms. This air must contain a certain amount of moisture. It must not be dry.

4. *Minimum and maximum temperature.* Rooms shall be brought to the follow-

ing temperatures one-half hour before school opens and maintained as nearly as possible at these temperatures throughout the day.

Classrooms	68 degrees
Showers and Dressing rooms	65 "
Shops and Manual Arts rooms	65 "
Toilets	55 "
Gymnasiums	55 "

5. *General Inspection and Care of Equipment:*
   a. Janitors shall inspect heating and ventilating conditions in the classrooms at frequent intervals during the school day, especially in cold weather.
   b. Coal shall be wet down several times a day to prevent dust and aid in combustion of volatile matter.
   c. Furnace room floors shall be flushed and swept several times each day.
   d. Ashes shall be drawn each day after school closes, if necessary, and shall always be removed in such a manner as not to escape during the process.
   e. All chambers, intakes, etc., furnace tops, fan rooms, etc., shall be kept clean.
   f. Fan—shall be kept running the entire day, with fresh air intakes so that sufficient fresh air is mixed with heated air. Rooms shall be kept warm until 5 P.M. This equipment shall be kept properly oiled. Air from hallways, gymnasiums, and rooms little used may be recirculated before school starts and to some extent after school is in session, but in all cases there must be a constant source of fresh unused air being forced into the rooms.

6. *Checking Heat Controls:*
   At times, due to unusual weather conditions and other factors, thermostats may not register correctly. Janitors can and should test same from time to time by suspending an accurate thermometer in mid-air from center of room and so check thermostats. Frequently, if a strong wind strikes building in one direction, walls nearest windows will be colder than other portions of rooms. Teachers will rearrange seating of pupils in extreme weather conditions when this is the case, if janitor is unable to control the situation.

SPECIAL WORK:

1. The janitor shall make such minor repairs and attend to such work of upkeep as he can and report all other needed repairs to the principal or superintendent.
2. The janitor shall make such inventories of janitor's supplies as he may be called upon to make by the principal and shall check in all shipments of janitor's supplies.
3. The care of the school grounds by the janitor shall include such work as removal of rubbish from the yard, the cutting of grass and weeds, the trimming of trees and shrubs on school property, sprinkling the lawn, care of flowers, the sweeping of sidewalks and steps, the shoveling of snow from sidewalks and steps except such sidewalks as are shoveled by the city, and, when necessary, scattering sand, ashes, or salt on them.
4. The janitor shall have general control over school property. He shall prevent the abuse of such property by children and adults. He shall have supervisory authority over pupils in

toilet rooms. He shall have incidental supervisory authority over pupils at entrances and in corridors, basements, and on the playgrounds.

5. The janitor shall wind all clocks weekly. He may be required to ring fire gongs and the school bell in the mornings but should not be required to ring class bells throughout the day, since such work interferes with his other duties.

MISCELLANEOUS JOBS:

1. The janitor must see that the flag is placed on the flag pole every day while school is in session and lowered every evening.
2. The janitor must be responsible for keeping sufficient toilet supplies in the toilets ready for use and must also be responsible for their proper use.
3. The janitor may be required to move furniture at various times throughout the year, but such work should only be at the order of the principal.
4. Janitors must either keep the temperature above freezing at all times or turn the water off at night so the pipes will not burst.
5. The janitor should not be required to run errands for anyone except himself—i.e., errands necessary in the performance of his regular duties.
6. The janitor shall be in the school building the whole time school is in session except from the hour of 11 to 12. He must plan to remain during the noon hour.
7. The janitor shall clean up after sick children. This is distinctly the janitor's work and is one case in which he should be notified of the need directly by the teacher.
8. Adjust school desks and seats and change seating arrangement as directed by the principal.

MISCELLANEOUS:

Economy in the use of supplies. Janitors shall see that lights are burned only when necessary; all supplies should be carefully used and any unnecessary waste reported to the principal.

Cleaning materials. When materials are furnished for various types of cleaning, the directions accompanying same should be carried out. If results are unsatisfactory, he should report the matter to head janitor before proper directions for use of the material are ignored. The philosophy that "if a cup of a certain material is good, a quart will be better" is not a safe one to follow; it may result in irreparable injury to surfaces so treated.

Coöperation with teachers. Directions and requests of superintendent, principal, and teachers are to receive courteous attention by janitors. These groups should work in harmony and whenever situations develop contrary to this, such situations should be reported to the superintendent.

Head janitor. Mr. ——, janitor of the —— school building, has been appointed head janitor and any difficulties with heating plants are to be reported to him. Any contemplated changes which local janitor may plan to make relative to the plant or heating equipment should first receive the approval of head janitor. Furthermore, his directions relative to the operation of plant and care of building are to be carried out. In case local janitor feels that such directions at any time are likely to be unsatisfactory, he should consult with head janitor or principal, who in turn will so inform the Superintendent of Schools.

Note: Schedules as attached should be carried out by all janitors. If requirements appear to be unreasonable or unnecessary, the matter should be taken up with the building principal, rather than refusal to carry out the schedules.

JANITORIAL SCHEDULE

	Twice a Day	Daily	Twice a Week	Weekly	Monthly	3 Times a Year	As Needed
Sweeping	Corridors Stairways Entrances Sidewalks near entrances	Offices Classrooms Special rooms Toilets Rest rooms Basement Gymnasium					
Dusting		Classrooms Special rooms Offices Desks Tables Furniture Tablet arm chairs	Window-sills	Radiators Window casings	Doors Lights Door frames Base-boards	Walls Ceilings Window shades	
Cleaning, Scrubbing, Mopping, etc.		Kindergarten floors Toilet floors Bowls Seats Urinals Drinking fountains Sinks Lavatories		Entrances Black-board Chalk trays Erasers	Stairways	Lights and globes Classroom floors Windows Inside Outside Inkwells	
Miscellaneous		Dispose of waste paper and garbage		Wind clocks			Grounds Walks Shrubbery Fences, etc.
Disinfecting		Urinals Toilets Shower rooms		In Fan Room			

AN EXPERIMENT WITH THE COÖPERATIVE GROUP PLAN

EARL P. WATKIN

Superintendent of Schools, Ilion, New York

Two years ago in September Ilion adopted a modification of the Hosic Co-operative Group Plan for the 5B, 5A, 6B, and 6A classes in its two elementary schools. The plan has, therefore, completed its fourth semester. The second year brought modifications of the plan, due to changes in the personnel included and to developments in the program offered the pupils.

The development has been a coöperative enterprise from its inception in the spring of 1929, when the plan was studied by the teachers of the North Street and West Hill schools with the principals and superintendent. It was one of the finest types of in-service professional study which could have been undertaken. The articles by Dr. James F. Hosic appearing in *Educational Method* were used as a basis for the study.

Accordingly, in September, the work of the coöperating grades was divided in recognition of the teachers' abilities and preferences into four groups. These moved from room to room and from teacher to teacher according to the program of periods arranged for the groups to be where the equipment, materials, and teacher of each division of the work were. This gives the word "cycle," which is a short name for the plan. The 6A home-room teacher was teaching English, composition, grammar, literature, and silent reading. The 6B teacher taught the social sciences—geography, history, and citizenship. The 5A teacher taught arithmetic and elementary science, hygiene and nature study. The fourth member of this teaching cycle was called the activity period. Instead of being under an activity teacher, as was done the second year, the grade music assistant and a teacher for auditorium activities divided their time between the two schools and acted as home-room teachers of the 5B classes, having the work in music, dramatics, operettas, pageants, and projects connected with the four groups in the one half-hour extra period three times weekly. Their work was augmented by the art assistant and physical training supervisors one day each week. This gave time for the music assistant to work with the lower grade teachers and the auditorium activity teacher to plan her programs and work on the schools' newspapers. Spelling and writing were taught by the home-room teacher.

The whole difficulty with the above was the handling of the activity work by so many special teachers. This did not result in the coördinating and correlating of the subject content and activity projects. This was corrected the second year, when the 5B teacher in each school was given all the activity work and the help of supervisors to direct it. The first year's experience taught at the outset, at least, what to avoid.

The second year's organization differed in the two schools, due to large grades in one school, which resulted in the forming of an ungraded class of eighteen children selected from the different grades in the cycle. An advantage here is that the ungraded pupils are in the cycle and go to the English, social science, and mathemat-

ics teachers, who know both what the regular graded groups have and what these ungraded pupils need to know. The home-room teacher of this group teaches reading, writing, spelling, and physical training, and directs the newspaper work, leaving music, art, and the auditorium work, dramatization, pageants, operettas, etc., to the activity teacher. It is, therefore, a five-class, five-teacher cycle with periods one hour long and a half hour extra for other purposes. The half hour is used for study or special work three days a week, for auditorium on the fourth day, and, by adding five minutes from each period in the cycle, for religious instruction in the church of the pupil's choice on a fifth day.

The program scheduled is given below for illustration of this organization.

The other school had a four-class, four-teacher cycle, with four periods 1¼ hours long and a half hour for writing and spelling by the home-room teacher three times weekly and by adding five minutes from each period in the cycle, for religious education and assembly as in the five-class-teacher cycle. This organization is shown on the following page.

For the next term the organization was again changed because, due to a crowded Junior-Senior High building, the 7B had to remain from January to June in each elementary school. We had a five-cycle, 5B-7B arrangement in each school, with the activity work divided between two teachers.

In one school one teacher had art, reading, newspaper, and correlated projects

Time	Home Room	Eng.	Soc. Sc.	Ar. & El. Sc.	R. W. S. P. T.	M. D. Aud.
		6A	6B	5A	Ung. Cl.	5B
8:45– 9:45	1	6A	6B	5A	Ung. Cl.	5B
9:45–10:45	2	5B	6A	6B	5A	U. C.
10:45–11:45	3	U. C.	5B	6A	6B	5A
1:15– 2:15	4	5A	U. C.	5B	6A	6B
2:15– 3:15	5	6B	5A	U. C.	5B	6A
3:15– 3:45	H. R. 6	6A	6B	5A	U. C.	5B
2:55– 3:45	Rel. Education Tuesday					

Periods	Mon. Wed. Thurs. Fri.	Tuesday
1	8:45– 9:45	8:45– 9:35
2	9:45–10:45	9:35–10:25
3	10:45–11:45	10:25–11:15 11:15–11:45 H. R.
4	1:15– 2:15	1:15– 2:05
5	2:15– 3:15	2:05– 2:55
6	H. R. 3:15– 3:45	2:55 Church School

Home Room	Eng.	Soc. Sc.	M. & El. Sc.	Activity
	6A	6B	5A	5B
1	6A	6B	5A	5B
2	5B	6A	6B	5A
3	H. R. 6A	6B	5A	5B
4	5A	5B	6A	6B
5	6B	5A	5B	6A

Periods	Mon. Wed. Fri.	Tues. Thurs.
1	8:45–10:00	8:45– 9:45
2	10:00–11:15	9:45–10:45
3 H. R.	11:15–11:45	10:45–11:45
4	1:15– 2:30	1:15– 1:45 H. R.
5	2:30– 3:45	1:45– 2:45
		2:45 Rel. Ed. Tuesdays

and another music, physical training, auditorium activities, writing, and spelling. In the other school one teacher had music, reading, auditorium, and correlated projects, and another physical training, newspaper, art, writing, and spelling. The schedule continued the same period as in the five-cycle plan given earlier and was arranged as below.

This shows so far the development of the organization of the plan as refinements could be effected. At first, it seemed that one period for activity, really considering special subjects, was all that could be spared from the time needed for the so-called regular subjects. The first year the working out of the scheme savored too much of departmentalization, but it seems now as the unsolved portion of a rather large order for one year. At any rate the organization was perfected, the difficulties were discovered and studied, and ways of

Home Room	Eng.	Soc. Sc.	Ar. & El. Sc.	Activity I	Activity II
	7B	6A	6B	5A	5B
1	7B	6A	6B	5A	5B
2	6A	6B	5A	5B	7B
3	6B	5A	5B	7B	6A
4	5A	5B	7B	6A	6B
5	5B	7B	6A	6B	5A

coöperating, correlating and coördinating were developed. Now the teachers feel that so much of this is done through the activity part of the cycle that two teachers can well be engaged in this work and all favor accordingly a five-cycle arrangement. If classes are large, the ungraded class in the cycle is favored.

As for the physical layout, regular classrooms with fixed desks were converted into special rooms with the text and reference books, maps, globes, art materials, music charts, books, etc., assembled as needed for the different subject groups in the cycle. A combination auditorium-gymnasium with piano is most valuable for activity work, a typewriter in a small room, and a manual training table and a few tools all find their places. Materials for various uses are furnished adequately. Library books and reference materials are added regularly.

Ways of coöperating, correlating, and coördinating the instruction are here given. Each ten weeks' work is laid out in units by the principals and superintendent under each subject for each class group according to the course of study after each teacher has given the principal her list. This is copied so that each teacher, principal, and supervisor may know what is in the course to be covered. Each then knows what the other is doing and, whenever possible, ties her work in with that of the other.

A development in one of our schools is given to illustrate the attempt to break down the barriers of subject compartments, at the same time striving for mastery in the essentials of each subject. This is the project for each class group. For example, the 5B project was "Travel Routes of New York State"; the 5A, "Books, Paper, and Ink-making"; the 6B, "Aviation"; the 6A, "Artists of Southern Europe." These vary each ten weeks and are designed for each teacher's field and are worked upon also outside her class under an activity teacher as time allows.

Another school worked out projects on "Man's Activities" in each country studied in geography during a ten-week period.

Copies of the units for each subject for each grade and the project for the second ten weeks of this semester follow.

5B—NOVEMBER, 1930

Second 10 Weeks

Geography

United States: Florida, South Atlantic and Gulf Coastal Plain, Atlantic Coastal Plain, Fall Line, Piedmont Plateau, Appalachian Mountains and Plateaus, New England, Corn Belt

History

Middle Ages: The Great Charter; Life in a Feudal Castle; Life in a Monastery; The Awakening of Europe; The Crusades; The Renaissance; Interest in Geography

English

Oral and written composition; friendly and business letters

Paragraphs, outlines and compositions

Punctuation: quotations, capitals, abbreviations, sentence punctuation

Dictionary and how to use index, dictation for drill of above

Literature: Memorization: "The First Thanksgiving," "Old Ironsides," "Valuation"

Appreciation: "Paul Revere's Ride"; "Landing of the Pilgrims"; "Opening the Piano"

Stories: "Why the Chimes Rang"; "Story of Joseph"; "Old Pipes and the Dryad"; "How Odin Brought the Mead"

Arithmetic

Fractions; subtraction and multiplication

Elementary Science

Bulbs, late garden crops; trees: oak, walnut, ash; Health Education

Drawing

Complete picture study books; develop Thanksgiving illustrations with reference to History and English; Christmas problem; construction and designing boxes, blotters and calendars; perspective drawing

Music

Thanksgiving, Flying Southward, Christmas Bells, Christmas Night, Merry Christmas; common and compound time signatures*; review lesson*; Windy Nights (those marked * are theoretical assignments)

Project

Travel routes of New York State

5A—NOVEMBER, 1930

Second 10 Weeks

Geography

Continue North America, Canada, Newfoundland and Labrador, Alaska, Mexico, Central America, Panama Canal Zone, West Indies and Continent as a whole, possessions of the United States

History

European Background (continued); Prince Henry, the Navigator; How the New World Was Found and Explored; Columbia—Spanish Exploration and Settlement; Results of Spanish Colonization in America; What Led the French to Explore and Settle in the New World; Cartier, Champlain, LaSalle, Jesuit Missionaries and Fur Traders; Results of French Exploration; What Led the English to Explore America; The Cabots; England in Time of Elizabeth; Drake

English

Oral and written composition; friendly and business letters; paragraphs, outlines and compositions; punctuation — quotations, capitals, abbreviations, sentence structure; dictionary and how to use index; dictation for drill of above

Literature: Memorization: "Farewell"; "A Psalm of Life"

Appreciation: "Woodman, Spare that Tree"; "John Gilpin"

Stories: "Flying Dutchman"; "Horatius at the Bridge"; "The Greedy Shepherd"

Arithmetic

Decimals, subtraction, multiplication, division, denominate numbers

Elementary Science

Health habits (Text)

Fish, frogs, toads, snakes, lizards; where they go in winter; hibernation and how they live

Drawing

Complete picture study books; develop Thanksgiving illustrations with reference to History and English

Christmas problem; construction and applied design; boxes, tiles, calendars, memo pads; perspective drawing

Music

Thanksgiving, Flying Southward, Christmas Bells, Christmas Night; common and compound time signatures; use of the triplet, both forms; arithmetic in music*; Merry Christmas, Windy Nights; review lesson* (those marked * are theoretical assignments)

Project

Books, paper, and ink-making

6B—NOVEMBER, 1930

Second 10 Weeks

Geography

Europe and directly associated lands; British Isles, Scandinavia, Denmark and Ireland, Netherlands and West Indies, Belgium, France and Germany

History

Colonization:

The New England Confederation and the

Dominion of New England; New York—The first Dutch settlers, Dutch exploration and settlement; New Netherlands; Pennsylvania

English

Composition: Oral; Written—letter writing, dictation, broken quotations, punctuation, outlines

Grammar: Corrective English; verb and verb phrases; review subject; noun, pronoun; dictionary drill

Literature: Memorization: "At Morning"; "Concord Hymn"; "Roll Down to Rio"

Appreciation: "Pipes at Lucknow"; "Snowstorm"

Stories: "Fulfilled Legend of Christmas Eve"; "Leak in the Dyke"

Arithmetic

Review denominate numbers, review decimals, fractional relations

Elementary Science

Project: History of the Flight—N. S.; Aviation—W. H.; Health—cleanliness, posters, cemetery of bad habits; Under water—seal, shark, fish, coral

Drawing

Finish design and construction of picture

Study books—design Christmas problem—boxes, tile, problems in perspective

Music

Thanksgiving, Flying Southward, Christmas Bells, Christmas Night; how to place signature sharps and flats*; review lesson*; Merry Christmas, Windy Nights (those marked * are theoretical assignments)

Project

Aviation

6A—NOVEMBER, 1930

Second 10 Weeks

Geography

Europe: Finland, Estonia, Latvia, Lithuania, Poland, Hungary, Rumania, Balkan; topical reorganization

Africa: Southern and Central

Asia: General features: Southwestern, Northern, Central, India, Ceylon, Indo-China and Malay Peninsula, China, Japan, Soviet Russia; topical reorganization

History

Colonization: The New England Confederation and The Dominion of New England

New York: The First Dutch Settlers; Dutch Exploration and Settlement; New Netherlands

English

Composition: Oral; Written—letter writing, dictation, broken quotations (omit in 6A), punctuation and outlines

Grammar: Corrective English; preposition—conjunction, interjection; general review of parts of speech; dictionary drill

Literature: Memorization: "The Flag Goes By"; "Before the Rain"

Appreciation: "Rhodora"; "Song of the Banjo"

Stories: "Miller, His Son, and their Donkey"; "The Shepherd Boy Who Became King"; "Feast of the Lantern"

Arithmetic

Commission

Profit and Loss

Interest

Elementary Science

Project: Electricity—W. H.; Madame Curie, Einstein—N. S.

Health: Winter animals, trapping; forest preservation—Christmas trees, cutting timber

Drawing

Project: Artists of Southern Europe; complete projects and booklets on picture study; Christmas problem, calendar, blotter pads; problems in perspective

Music

Thanksgiving, Flying Southward, Christmas Bells, Christmas Night; lesson on time motions*; seventh time motion*; use of signa-

ture sharps and flats*; use of five chromatic characters in writing*; Merry Christmas, Windy Nights (those marked * are theoretical assignments)

Project

Artists of Southern Europe

I would conclude by stating that the advantages of this experiment have been observed to be:

1. Teachers have pupils two years instead of one and each comes to know the other sooner and longer.

2. Teachers concentrate on their subject field by specialization and teach the whole field instead of its parts.

3. Pupils seem actually more capable of individual subject attainments and decidedly better able to work together. They intermingle socially through their activity period.

4. Self-expression, for example, in prose, poetry, modeling, designing, construction, etc., is very noticeably developing.

5. The activity period becomes the best medium for integrating the learning activities of different subjects through assemblies, school paper, P. T. A. programs and entertainments.

6. The art work is also an excellent medium of integration and correlation.

7. It requires no more teachers than the regular grade organization, but each teacher becomes a specialist in her field, and this advantage goes over to the pupils.

The difficulties are:

1. Providing as much integration of learning in different fields as could be done under a single teacher all day if she used the new activity school methods freely.

2. Finding a teacher who can teach and handle easily an activity period of music, physical education, auditorium training and art, to say nothing of integrating these with language, social science, or elementary sciences.

3. Trying to do so much in one activity period by including art instead of having the Hosic arts and crafts period.

4. Finding teachers who can teach elementary science. Elementary science doesn't seem to belong with arithmetic, but goes rather in the activity period.

5. Having definite plans for coördinating and integrating the learnings of several subjects instead of a theoretical discourse on the value of this procedure.

You say this is departmentalization only. We had this once, and recognize the difference. Bear in mind, there are only four teachers, or five with us, with work organized under four or five main heads, and with these teachers trying to integrate their subjects as much as possible. There are times when learnings take form from drill and hard study. At other times, learnings are taking place through integrated activities. Both methods are possible under this plan.

PROPERTY OF
GRAND HAVEN PUBLIC SCHOOLS

SUPERVISORY READING PROGRAM

MARY BROWNING, BONNIE C. HOWARD,
AND GERTRUDE MODEROW[1]
Louisville Public Schools, Louisville, Kentucky

It is a well-established fact that supervision in the past has been more concerned with the individual teacher's problem and with certain matters of routine than with definite programs for the improvement of instruction. In the fall of 1929, two of the writers began their work of supervision in the early elementary grades of Louisville, Kentucky. Coming into a new field where a knowledge of the most urgent needs of the workers was impossible, and recognizing the fact that constructive supervisory programs are based upon the coöperative endeavor of all supervisory officers and teachers, they decided to give the teachers a chance to choose the topic which would receive the major emphasis in the professional program of the year. A large majority of the school people voted to attack the reading situation.

In the meantime, observations were being made in classrooms to get general impressions of actual instructional needs. Results of both practices led to the decision that an analysis of the reading situation would be desirable.

With these facts at their command, the supervisors appealed to the Bureau of Research. Under the direction of one of their number, tests were given and the scores were interpreted and handed to the supervisors to serve as a guide in planning remedial instruction. The following reading tests were administered in November: To all 2A classes, the Gates Primary Reading Test, Form I, Types 1, 2, and 3; to all 3A classes, Thorndike-McCall Reading Test, Form 3; and to both classes, the Detroit Primary Intelligence Test, Form C. Since no budget had been provided for a special survey of the entire reading situation, we selected these two particular groups of children in the belief that they represented a typical sampling. The results revealed two facts: that in many instances the children were not doing standard work for their grades, and that a wide range of abilities was common to many of the grades tested.

Table I gives a brief summary of the results of the November tests administered to the 2A pupils. According to the Detroit Primary Intelligence Test, the mean mental age of the pupils was slightly below the mean chronological age. The mean reading age as measured by the Gates Primary Reading Test was below the mean mental level. The pupils were quite consistent, however, in their mastery of the particular reading skills covered by the test. In recognition of words, in reading of words, phrases, and sentences, and in reading of directions, their reading ages were respectively 7-8, 7-8, and 7-7. This gave them a composite reading age of 7-8 and placed their achievement considerably lower than either their chronological or their mental ages would warrant.

Since these pupils had completed two months of the second term's work, Grade 2.7 was taken as the standard which they should have reached. The reading age corresponding to this grade placement is 8.2,

[1] Miss Browning is Supervisor of Early Elementary Grades, Miss Howard is Assistant Supervisor of Early Elementary Grades, and Miss Moderow is Assistant in Research in the Louisville Public Schools.—Ed.

or approximately eight years and two months. Normally the mean chronological, mental, and reading ages would be the same. The Louisville 2A children were chronologically and mentally more mature than the Gates standard would require; still they were slightly more than one semester below the norm in both the constituent and the composite reading abilities.

Table I indicates the wide variation between average chronological, mental, and reading levels at the various schools; the complete data compiled during the testing program indicated a like variation among the individuals at many of the schools. We realize the unreliability of the range as a measure of dispersion, but we have presented the highest and lowest individual school means to show how complicated were the problems which had to be faced in planning the remedial work for the year.

Table II gives the results of the Thorndike-McCall tests which were administered to the 3A children at the same time. Here as in Grade 2A the pupils' mental ages averaged lower than their chronological

TABLE I

COMPARISON OF CHRONOLOGICAL, MENTAL, AND READING AGES OF 2A WHITE PUPILS IN THE PUBLIC SCHOOLS OF LOUISVILLE, NOVEMBER 8, 1929

	C.A.	M.A.	Reading age				Reading grade			
			Type 1	Type 2	Type 3	Comp.	Type 1	Type 2	Type 3	Comp.
Mean for City	8–7	8–4	7–8	7–8	7–7	7–8	2.15	2.2	2.1	2.15
Highest individual school mean	10–0	9–10	8–7	8–7	8–10	8–8	3.0	3.0	3.1	3.0
Lowest individual school mean	8–0	7–6	7–0	7–1	7–2	7–1	1.5	1.6	1.65	1.6
Norm	8–2	8–2	8–2	8–2	8–2	8–2	2.7	2.7	2.7	2.7

TABLE II

COMPARISON OF CHRONOLOGICAL, MENTAL, AND READING AGES OF 3A WHITE PUPILS IN THE PUBLIC SCHOOLS OF LOUISVILLE, NOVEMBER 8, 1930

	Chronological age	Mental age	Reading age	Reading quotient
Average for City	9–8	9–4	8–8	90
Highest individual school average	11–2	12–0	11–6	118
Lowest individual school average	8–5	8–2	7–6	67
Norm*	8–11	8–11	8–11	100

* Interpolated.

DIAGRAM 1. Comparison of Reading Ages* of Pupils in Schools for White Children in Louisville, Kentucky. (Ages computed from Gates' Primary Reading Test administered in November, 1929, to all 2A pupils and in May, 1930, to the same children then enrolled as 3B pupils.)

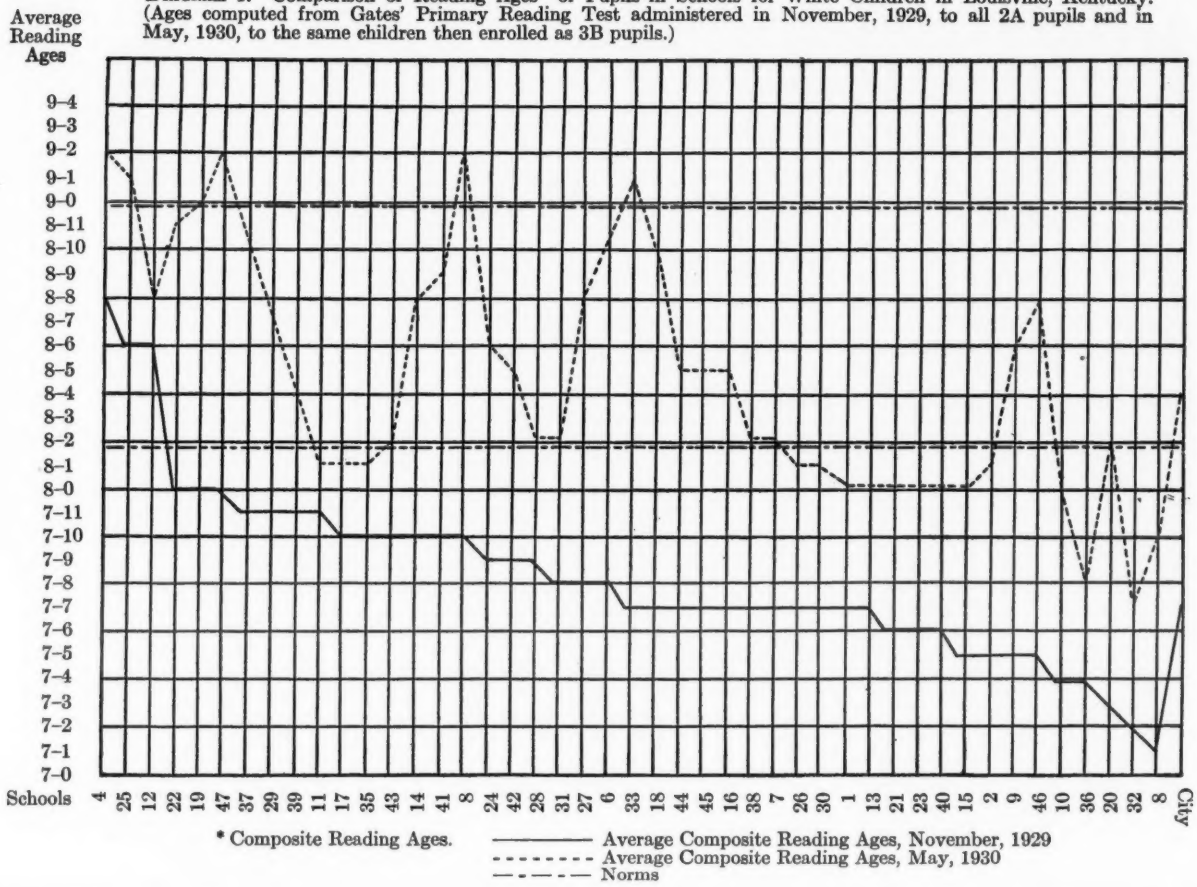
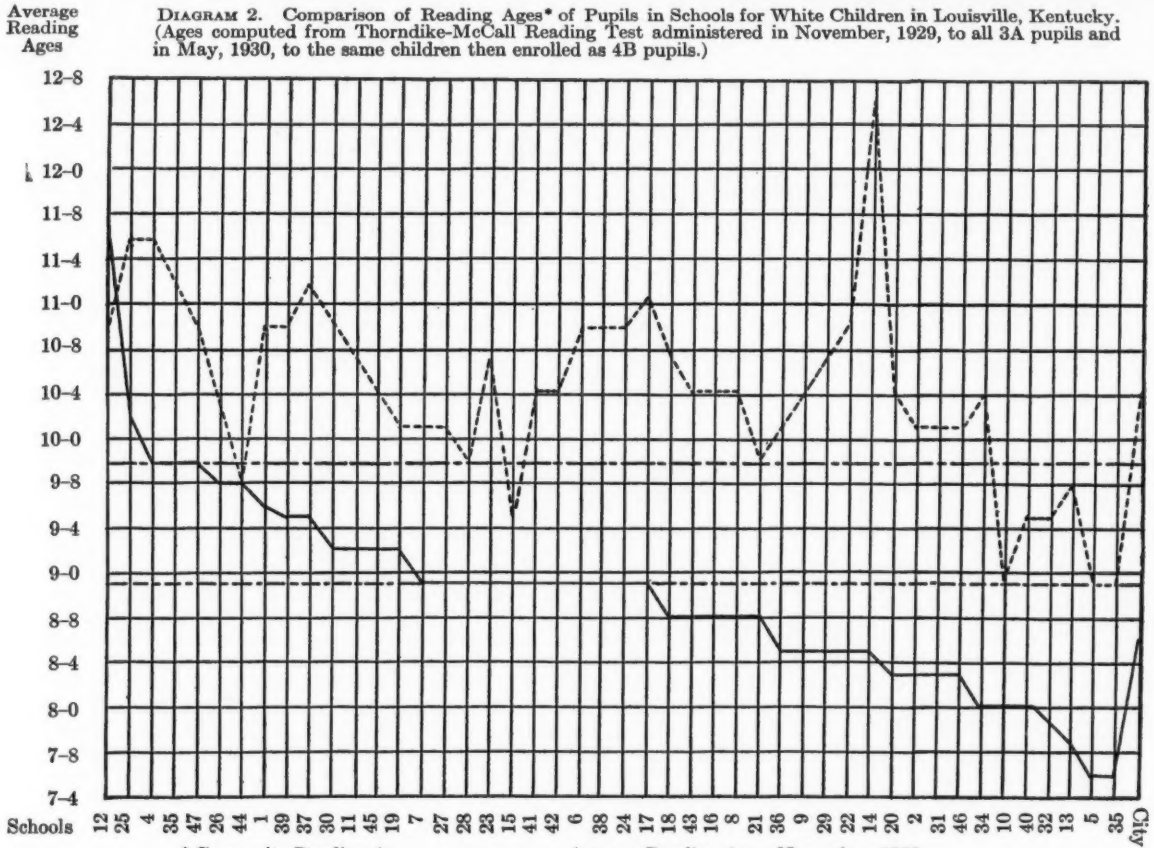


DIAGRAM 2. Comparison of Reading Ages* of Pupils in Schools for White Children in Louisville, Kentucky.

Average

DIAGRAM 2. Comparison of Reading Ages* of Pupils in Schools for White Children in Louisville, Kentucky. (Ages computed from Thorndike-McCall Reading Test administered in November, 1929, to all 3A pupils and in May, 1930, to the same children then enrolled as 4B pupils.)



ages, the reading ages averaged lower than the mental ages, and the mean reading quotient for the city was 90.

The reading age norm, interpolated from the Thorndike-McCall standards, is approximately 8-11 for the children at this grade level. The 3A pupils were therefore sufficiently mature chronologically and mentally for the work they were attempting, but their mean reading age was three months below the norm.

The Gates reading tests are diagnostic; the Thorndike-McCall tests are of the survey type. The results of the former indicated that the 2A children in the city were deficient in all phases of reading ability as defined by Gates. Believing that the conditions which were responsible for the deficiencies among the 2A people were coexistent with the older class, the supervisors assumed that the same weaknesses were to be found among the latter and therefore utilized a similar procedure in planning the remedial work for both classes.

Teachers and principals were instantly aroused in a concerted effort to attack their individual problems in the light of their own immediate needs.

Methods Used to Improve Instruction

1. Children were re-classified in the light of results of the standardized group tests.
2. Individual tests were given in a number of cases where the situation demanded it.
3. Individual difficulties were diagnosed and solved through a wide use of informal testing based on the reading material in use at the time.
4. A wider use of work-type readers was encouraged.
5. Graphs were made of test results and were found to be an effective means of creating class spirit and arousing in the individuals a desire to improve.
6. Individual differences were provided for in some schools by having reading classes meet at the same time in all the primary rooms. When the classes were called the pupils went to the various rooms in which recited the groups to which they had been assigned. In this way they received instruction in reading each day at their own levels of advancement.
7. Coach teachers were available in some schools where instruction was afforded throughout the morning in specific phases of reading.
8. Committees were organized to center attention upon the development and tabulation of specific practices which every teacher must have at her command in order to teach reading effectively. From time to time appropriate teaching techniques and specific reading objectives were published in the primary "News Bulletin" and distributed monthly among the teachers. In some cases principals were called upon to write up their own particular program for the bulletin.
9. At the regular grade meetings reports were made by the committee members who came prepared to present concrete suggestions and helps for improving reading deficiencies. Some unusually clever exhibits of work were provided.
10. Demonstration lessons played an important part in the program. These were conducted by the supervisors and by certain teachers who were getting splendid results in eliminating reading deficiencies.
11. Mimeographed reports of the studies made by the committees were put into the hands of all the school people the following year.
12. Case studies were made.

After these remedial measures had been employed for almost exactly six months, the tests were repeated during the first week in May, Form 2 of the Gates Test being administered to the 3B children and Form 5 of the Thorndike-McCall Test to the 4B children.

Table III gives the reading status of the 3B pupils in May. In addition to the

TABLE III

READING STATUS AS JUDGED BY RESULTS OF GATES PRIMARY READING TEST, FORM 2, OF 3B WHITE PUPILS IN LOUISVILLE PUBLIC SCHOOLS, MAY 5, 1930

	C.A.	Reading age				Reading grade			
		Type 1	Type 2	Type 3	Comp.	Type 1	Type 2	Type 3	Comp.
Average for city	9-1	8-2	8-4	8-4	8-4	2.7	2.8	2.8	2.8
Highest individual school average	10-4	9-2	9-4	9-4	9-2	3.45	3.6	3.6	3.45
Lowest individual school average	8-2	7-8	7-8	7-6	7-7	2.30	2.3	2.1	2.2
Gain for the city	6	6	8	9	8	.55	.6	.7	.65
Norm	9-0	9-0	9-0	9-0	9-0	3.3	3.3	3.3	3.3

type of data included in Table I, it gives the pupils' gain in mean reading age and in mean grade status.

Since the increase in mean chronological age was equal to the time which elapsed between tests, it may safely be assumed that for the city the change in the personnel of the classes was not sufficient to have any appreciable effect on the reading status. The range in reading levels was still wide, but again the pupils were consistent in their abilities, for the reading ages on the respective parts of the test were 8-2, 8-4, and 8-4.

The gain in word-recognition age was equal to the chronological age gain, while the gain in ability to read words, phrases, and sentences was eight months and the gain in ability to read directions was nine months. Here is evidence that while the pupils made a satisfactory advance in ability to recognize isolated words, they had advanced two months further in ability to grasp the thought from short printed statements and still further—nearly a year—in ability to comprehend and to react to the thought in a complete paragraph.

The pupils had not yet reached the Gates standard for a class completing three months of the low third grade work, but they had begun at a low level and since they are mid-year people they did not have the advantage of the added maturity which would have been gained during a summer's vacation.

Diagram 1 gives graphically a comparison between the mean composite reading ages of the 2A-3B pupils of the different schools in Louisville in November and in May.

Table IV shows the advance in mean reading age made by the 3A-4B pupils.

The range in mean reading ages is considerably narrower than it was in November and suggests a change in the personnel of the group. However, this cannot be responsible for the great gain in mean reading ability for, to quote the manual which accompanies the tests.[2]

[2] Thorndike, E. L., and McCall, Wm. A., "Directions for Using Thorndike-McCall Reading Scale," p. 7. New York: Teachers College, Columbia University.

"The Reading Quotient has very great value, because the school cannot raise the Reading Quotient above 100 nor depress it below 100 by creating undue chronological retardation or acceleration respectively."

Graphic data on the improvement in reading made by the 3A-4B pupils are given in Diagram 2.

CONCLUSIONS

The remedial treatment given to the 2A-3B and 3A-4B pupils in the Louisville Public Schools has resulted in a marked increase in their reading ability.

It has resulted in a better attitude on the part of the pupils by intensifying their interest in reading and, especially, through the use of graphs depicting the progress of individuals, it has fostered in them greater loyalty to the class as a whole.

It has resulted in a better attitude on the part of the teachers (1) by making them more creative and more scientific in their teaching procedure; (2) by fostering in them an appreciation for professional reading matter; and (3) by making them more conscious of the desirable objectives for the teaching of reading.

TABLE IV

READING STATUS AS JUDGED BY RESULTS OF THORNDIKE-MCCALL READING SCALE, FORM 5, OF 4B WHITE PUPILS IN LOUISVILLE PUBLIC SCHOOLS, MAY 5, 1930

	Chronological age	Reading age	Reading quotient
Average for city ..	10–2	10–4	101
Highest individual school average ..	11–2	12–6	127
Lowest individual school average ..	9–6	8–11	80
Gain for the city ..	6	20	11
Norm*	9–10	9–10	100

* Interpolated.

A PLAN FOR STIMULATING PRODUCTIVE RECREATION IN A FOURTH GRADE

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THE PROBLEM

The word recreation connotes leisure. It will, therefore, constitute a fruitful approach to our problem to ascertain the amount of leisure time which is actually available to the pupil in a fourth grade, the time schedule of which is organized on a subject basis. The pupil who does not require individual assistance from the teacher for the purpose of removing subject deficiences is free to enter the room at 8:30 A.M. and to engage in activities of his own choice during the following half hour. The same privilege is extended to all pupils between 1:15 and 1:30 P.M. A third possibility arises from the fact that the teacher encourages those who work at an accelerated pace and, therefore, finish the various subject assignments before the close of the periods to undertake supplementary enterprises. It is evident, then, that a not inconsiderable amount of leisure for the pupil is provided automatically by the time schedule and that additional time is available as a result of the teacher's manipulation of the school program.

What observations has the writer made with reference to the pupils' employment of their leisure time? Attempts to create an environment which is attractive and stimulating have been rewarded by the assiduous use of facilities for voluntary reading, writing letters, drawing, memorizing poems, preparing stories to be reproduced to the class, and discussing the materials displayed on the bulletin boards. At the same time it has not escaped notice that assiduous use of time is not necessarily profitable in the sense that each pupil engages in activities which are commensurate with his capacities and in harmony with his needs. It has been noted, for example, that certain pupils read superficially, read one type of material to the exclusion of other desirable literature, display a tendency to begin but never complete a story, a letter, or a drawing, engage in aimless discussion with others, and follow exclusively one type of activity in which they feel themselves to be proficient.

A teacher who concerns herself seriously with the social objectives of education will not hesitate to conclude that a situation which invariably produces these reactions is lacking in dynamic quality. While it is admissible to maintain that a program of this nature develops the child's recreational resources to a limited degree and, therefore, furthers the attainment of one of the major goals of education, it is, nevertheless, arguable that the potency of a recreational program can be enhanced by the fuller recognition of two considerations. First, while the indulgence of interests which result merely in enjoyment is a reputable form of recreation, it is, according to Thorndike and Gates, intrinsically inferior to the higher type known as productive recreation.[1] To be content, then, with developing only the first type of recreational resourcefulness is to place a narrow interpretation on the educational objective

[1] Thorndike, Edward L., and Gates, Arthur I., *Elementary Principles of Education*, p. 51. Macmillan Company, 1929.

under consideration. Second, not only is the recreational procedure which has prevailed unsatisfactory as an end in itself but it fails to reënforce other school provisions for the child's development as much as one might legitimately desire and is consequently lacking in pedagogical merit. There is no antagonism between recreation and the child's growth in knowledge, skill, interests, and social adjustment. Nor is there necessarily incompatibility between recreation as it can be secured in the school and the program of instruction in the various subjects. We are interested, therefore, in a recreational program which not only will set up the socially desirable goal of productive recreation but which will enrich the academic subjects and emphasize their significance, provide for growth in terms of knowledge, skill, and interests, and stimulate the exercise of such socially valuable traits as responsibility, initiative, coöperation, leadership, economical methods of work, adequate planning, courage for self-expression, originality, and self-direction.

To what may the inadequacy of the recreational program described be attributed? It will be recalled that the teacher's function during the greater share of the leisure time which arises during the school day of the child is defined for her by the authorities as giving instruction to pupils with subject disabilities. It can readily be deduced that this circumstance precludes the possibility of the teacher's giving more than casual attention to the activities of the pupils who are not members of her instruction group. We have previously observed that pupil freedom in a stimulating environment is not the only factor which conditions the educational effectiveness of a recreational program. The conclusion seems defensible that the factor of guidance, which has heretofore been absent, assumes large importance in the life of immature individuals and that, therefore, the teacher is obligated to include the management of leisure activities among her duties. The assumption upon which the following proposal rests is that the teacher can more effectively guide recreational pursuits than she has done heretofore without relinquishing the duties which apparently seem to operate restrictively upon her desire to broaden the scope of her functions.

THE PLAN

Without curtailing the children's privilege to pursue the impersonal pleasures which have been enumerated, the teacher will endeavor to arouse interest in activities which will be productive in the sense that they will result in tangible outcomes. Inasmuch as the teacher will continue to be occupied as she has been heretofore, she will substitute for her personal supervision a series of recommendations in writing. The nature of the guidance necessarily limits the suggested activities to those which do not require subtle treatment or elaborate explanations. For example, the omission of creative attempts in the field of poetry does not mean that children will be deprived of this valuable experience. It means, rather, that this activity will be given the inspiration and guidance which it merits during literature periods.

The organization of the proposed program of leisure activities calls for a consideration of the time schedule. The period between 8:30 and 9:00 A.M., as well as the time made available to certain pupils after the completion of subject assignments, will be designated "Recreation Periods." A daily "Advice Period," during which time children will seek and receive help in their activities from the teacher, will be provided before the opening of the afternoon session, namely, between 1:15 and 1:30 P.M. Twenty-five minutes of the daily allotment for language instruction will be used as a "Conference

Period," the purpose of which will be to have the class present and discuss the results of their work. One conference period per week will be given over to book reports.

In order that the pupils may have access to suggestions for activities and guidance in their methods of work during the recreation periods, instructions will be placed on the bulletin board. Attention is called to the fact that each activity is discussed under three headings, namely, *Helping Yourself, Preparing Your Report,* and *Remembering Others.* It is hoped that the child's repeated contact with items No. 1 and No. 3 will serve to impress upon him the importance of the habits implied. In order that the fullest measure of social experience may be achieved during the conference period, which is to be an integral part of the plan proposed, item No. 2 attempts to prepare the child for effective participation in class discussions.

Since space forbids the presentation of all of the prepared material, our examination of the instruction sheets will be confined to a few specimen activities.

What You Can Write

Helping Yourself

1. If you have made a drawing, you can write something to place with it on the bulletin board. You can write a title for your picture; a sentence, a paragraph, or a rhyme to describe it; one or more questions for other children to answer.

2. As you read the geography and history books on the reading table, you can think of questions which you would like to have answered. After you have written the questions, you may give them to the chairman.

3. If you have brought something for the class museum, you can write a label or a story to put with it.

4. Your classmates are always happy to receive friendly letters. If someone is absent, he will be very much pleased to learn what we are doing in school and to know that we are sorry he is absent.

5. The editors of the school paper will be glad to print a story telling about the interesting things our class is doing. They are always ready to print a good rhyme or a poem. If you will look at the last issue of the paper on the reading table, you will see other things that can be printed.

Your language book will remind you about capital letters in your titles and sentences and about punctuation marks. The index will help you find the pages that tell about capitalization, punctuation, and indentation. If you have trouble using the index, ask another child or your teacher for help.

Remember that neat writing will improve your work.

When you have finished writing your article, ask your teacher to see whether you have made any mistakes.

Preparing Your Report

It will help other children to know how you used your language book to avoid and correct mistakes.

They will be glad to hear you read what you have written.

What else do you think they would like to hear you tell?

Remembering Others

How can you help save paper?

How to Give a Play

Helping Yourself

Think about an interesting story that you have read in one of our library books or readers. Have we been studying about any great man in our history classes whose part you would like to take in a play? If you cannot think of a good subject for a play, you can find suggestions in the card catalog.

After you have decided what your play is to be about, find out how many characters you wish to have. In order to find children who wish to act in the play, you can ask some of your classmates, put a notice on the bulletin board, or make an announcement during the conference period.

PROPERTY OF
GRAND HAVEN PUBLIC SCHOOLS

How many scenes are you planning to have? After you have discussed this with the other characters, your teacher will be ready to help you decide during the advice period.

When you are rehearsing, it is a good idea to have the characters help each other by making suggestions. Reading the story carefully will give you ideas for improving the conversation.

Be sure to practice often enough so that every character knows his part well. Ask your teacher for suggestions if you have difficulty or when you think your play is ready to present to the class.

Before making the costumes, be sure that you know how the characters ought to be dressed. Pictures in books will help you. You can get help at the Public Library. It is a good idea to make a drawing to show how a costume will look when it is finished.

After you have planned your costumes you will be able to find directions for making them in the card catalog. If you think you need a background, ask your teacher whether the art lessons can be used to have the class help you.

Preparing Your Report

Before the play begins a pupil can announce the title, the names of the characters, and the names of the children taking parts.

After the play the children will probably like to ask questions. Perhaps you could tell which of the costumes was most difficult to make.

Remembering Others

Other children will wish to read the books you have been using. Be sure to return them at the end of every recreation period.

When you are rehearsing, try to have each child listen courteously while suggestions are being made. Remember that the play will not be a success unless everybody is willing to coöperate.

How to Prepare an Exhibit

Helping Yourself

The card catalog has suggestions for exhibits. When you have decided upon a topic, you can get more ideas about the things you want to show by looking through our geography books and pictures.

Before you plan your drawings and bring in other things, ask your teacher for space so that you will know how much room you can have.

Your exhibit will be interesting if you show different things. Make drawings, cut pictures and advertisements from newspapers and magazines, bring in real things, and make models of clay, wood, soap, or paper.

Labels and stories for your articles will help visitors understand what they are looking at.

Be sure that your material is tacked straight and that it is not crowded.

Preparing Your Report

When your exhibit is ready for visitors, you may announce it during the conference period.

The visitors will learn more if you encourage them to ask questions and if you explain things for them. It is a good idea to have another pupil help you explain the exhibit. Be sure that you know enough about everything you are showing so that you can answer questions. Reading geography books will help you get information.

Remembering Others

The magazines which you use will probably have material which others can use. Try to cut only what you need from the magazines. If you bring books from home, the class will appreciate your leaving them at school for others to use.

When you take down your exhibit, leave the bulletin board as you found it. Be sure to return all pins and thumb tacks.

Additional specifications which have been similarly constructed bear the following titles: "How to Make a Motion Picture," "Belonging to the Book Club," "Reading Interesting Stories," "How to Give a Puppet Show," "How to Give a Pantomime," "How to Make Things for the Museum," "Enjoying Poems," "Making Health and Safety Posters," "Making Books," and "How to Make a Peep Show."

In acknowledgment of the experimental nature of the present suggestions, the possible extension of their range and the

COLUMBUS

Plays or Motion Pictures	*Peep Shows*	*For the Museum*
Columbus appears at the court of Spain	The island of San Salvador as it looked from the ship	The "Santa Maria"
Columbus and his son stop at La Rabida	The Indians watching the ship approach the island	Costume dolls:
A messenger from Isabella overtakes Columbus	Columbus landing on the island	Columbus
		Monk

NEW AMSTERDAM

Plays or Puppet Shows	*Pantomimes or Peep Shows*	*For the Museum*
Peter Minuit purchases Manhattan from the Indians	Scenes in New Amsterdam:	English ship
The Dutch surrender to the English	On the street	Dutch house
	In the home	Dutch furniture
		Costume dolls:
		Stuyvesant
		Dutch woman
		Dutch boy, girl

periodic modification of the instructions are contemplated.

Having examined the contents of the bulletin board, we may now direct our attention to another source of information which will be accessible to the pupils, namely, the card catalog. The reason for segregating this material is twofold:

1. Inasmuch as a major purpose in the organization of the activities has been to vitalize and enrich the content of geography and history, the teacher will aim to capitalize interest in a unit of thought at the time when it is being considered, and she will, therefore, wish to withhold certain topics for treatment until they seem to be suggested by the developments in the subjects concerned.

2. It is believed that general rather than specific instructions may in some cases stimulate children to use their own resources in conceiving an expressional activity instead of securing aid from the card catalog. In other words, it is hoped that a greater degree of originality may be an outcome if such challenging statements as the following appear with calculated frequency: "If you cannot think of a good topic for a play, you can find suggestions in the card catalog."

The examples above are submitted to indicate the nature of the reference cards.

A WHEAT BOOK

Pictures showing the farmer plowing, seeding, harvesting, and threshing
Pictures and sketches of animals which help the wheat farmer
Pictures of wheat farms as they look in spring, summer, autumn, and winter
List of things made of wheat
Names of cities in the North Central States which have grain elevators
Names of cities in the North Central States which have flour mills
Sketch of a farmer sowing before he had machines
Names of the North Central States which grow wheat
What is the difference between spring and winter wheat?

A WHEAT EXHIBIT

Pictures of machines used by the wheat farmer
Sample of wheat flour
Labels from packages containing foods made of wheat

Flour sacks showing where the flour was milled
Post cards of cities in the North Central States which have elevators and flour mills

It may be remarked that the contents of the card catalog will be subject to the same process of extension and modification to which reference was made in discussing the general instructions. Moreover, it is proposed to enlist the coöperation of the children in the elaboration of the present material by recording any successful original effort.

In order to assure ourselves that the proposed program, which seeks to direct and develop capacities, marks an advance over the practice of merely indulging capacities and interests, an attempt may well be made to visualize the activities of the recreation, conference, and advice periods. An analysis of the instructions warrants the expectation that opportunities for such educative experiences as the following will be of high frequency during the recreation periods: extracting information from instructions and books; locating and using efficiently the resources of card catalogs and the Public Library; applying and realizing the need for extending knowledge and skill in the field of such subjects as oral and written language, drawing, writing, design, and construction; appreciating the rich content of geography and history; reading literature with enjoyment; using materials economically; exercising initiative in conceiving goals and methods of work; developing inventiveness and resourcefulness in interpreting instructions for work which are suggestive rather than minutely prescriptive; realizing the value of planning and the need for preparation and sustained application; entering into friendly relations with the teacher to secure advice; establishing contacts with classmates which call for courtesy, leadership, helpfulness, and coöperation; and exercising the capacity for self-direction in assuming responsibility for carrying out successive steps in an undertaking.

The hope that the conference periods will yield equally promising educational outcomes is based on the belief that the following possibilities inhere in the conference as it is conceived by the writer: (1) stimulating the type of purposeful and spontaneous linguistic expression which results from an animating subject of conversation; (2) inducing pupils to enter into wholesome social relationships while giving and receiving criticisms and suggestions and appreciating the merit of each others' contributions; and (3) developing assurance on the part of all pupils, particularly the timid and retiring, in addressing an audience.

There now remains to be discussed the technique of conducting the so-called advice period. From the teacher's point of view this is the crucial opportunity for realizing her ideal of guidance, and the period will, therefore, be devoted to establishing helpful contacts with all pupils and particularly with the children who constitute problems. There is danger that without proper safeguards instituted by the teacher the foregoing values will not accrue to three types of pupils, namely, the capricious child, who chooses an activity impulsively and indiscriminately and soon drops it without a legitimate reason in order to engage in one which seems to be more attractive; the timid child, who becomes the victim of discouragement as soon as he encounters difficulties; and the plodding child, whose lack of resourcefulness causes him to spend an undue amount of time on an activity without securing commensurate returns. A systematic program of guidance assisted by a thoroughgoing scheme of record-keeping seems to offer a tentative solution of the twofold problem of supervising the work of all pupils and

Name of Pupil				
Activity	Date Begun	Advice	Date Completed	Remarks
Book report	Sept. 8	1–1–1	Sept. 21	Needs a group activity.
Play	Oct. 5	1–1	Oct. 29	Has improved in consideration for others.

of giving special attention to the needs of the problem cases.

An elaborate system of records which establishes the impression among the children that they are being rated on their achievements in comparison with other pupils and that a large number of enterprises is the goal to be attained would conceivably defeat the purpose of the proposed plan in that the activities would soon cease to be recreational and expression might be inhibited. The principle is, therefore, to be established that extreme care must be exercised by the teacher in selecting a method of maintaining contact with the class. The considerations presented seem to support the plan of devising two types of records, namely, a record which is accessible to the children and one which is prepared by the teacher for her own use exclusively.

The children's record may be provided by placing below each instruction sheet appearing on the bulletin board a sheet of paper, on which the pupils who choose the activity concerned record their names and the date on which they make their decisions. It will be a matter of agreement that a name may appear on only one list at a time and that a line is to be drawn through it as soon as the report of the completed activity has been presented to the class. A record of this nature will operate both as a check for the child who needs to be reminded of his original plans and as a stimulus to achievement.

On individual cards which bear the children's names the teacher will copy the information secured from the children's record and list other data of importance. The form above is contemplated.

In planning the work of the advice periods, the teacher will make the utmost use of the cumulative record cards, the aim being to confer with each child periodically for the purpose of giving advice and encouragement. Whenever the pupil consults the teacher of his own volition or by her request, a mark will be recorded on the card so that there will exist no danger of the teacher's losing contact with any one child. It is, of course, conceivable that some children will be summoned more frequently than others, depending upon the nature of their activities and upon their capacity for directing their own efforts. With the needs of the problem cases in mind, the teacher, in addition to giving help, will under certain circumstances deflect a pupil's choice of an activity to one which is potentially more advantageous for his development, persuade him to become a member of a group, or emphasize the value of regular rather than spasmodic effort. Under the head of "remarks" will be recorded such needs of the individual child as are discoverable by analyzing his reports and his social attitude during the conference periods and by observing his methods of work in the various school subjects and, to a limited extent, during the recreation periods.

THE CLEARING HOUSE

WATER–A UNIT OF WORK IN THE SIXTH GRADE

The importance of water in any community is great, but in Southern California it is paramount. The growth of any city in this semi-arid region goes hand in hand with, and is dependent on, the development of water. Children of the intermediate grades, more particularly of the sixth, can gather valuable information, much of it at first hand, from the study of their local water system and they will gain an understanding and appreciation of the problems which had to be solved in connection with its development. To trace the water from the distant mountain tops to the tap in the kitchen sink is a fascinating study to young people, at least so the pupils of two 6A grades found it at Garfield School.

One class had been studying forestry and in connection with this study had made a relief map of the Laguna Mountain Forest Area. This led to the study of the surrounding country: the desert to the east, the fertile valleys and the foothills to the west. The problem of the contrast between the two regions arose. Climate, rainfall, drainage, and water-sheds came into the study. Two leading questions had to be answered: "Why do we have to have dams in San Diego County?" and "Why are they located where they are?"

Facts studied about the climate and precipitation helped to solve the first question and a study of the topography and distribution of rainfall contributed to the solution of the second.

Only a few of the children had seen any of the dams of the county, so it was decided to visit two of the most accessible reservoirs. Before starting on the trip, each child was given a paper with mimeographed directions and questions covering the trip. In this way observation was directed and stimulated. Upon the return from one trip, the children did not agree as to their interpretation of certain observations. Another trip was made with a smaller group to secure more accurate information. Through the courtesy of Mr. Savage, hydraulic engineer of San Diego, the pupils were shown many details of the dam not usually seen and the construction was thoroughly explained.

Soon the walls of the schoolroom were covered with large pictures of the various types of dam: gravity arch type, multiple arch, buttress or hollow type, loose rock fill, etc. Information was secured by the pupils writing to the city water department. Maps, folders, and monographs were put at the disposal of the class, and teacher and pupils studied the material together. The fact that the teacher knew very little about the subject to begin with was an incentive rather than an obstacle.

Pupils who had made the forestry map now wanted to make a relief map of San Diego county showing the location of the various dams. Two sand-tables were joined for larger space and buckets full of adobe and sand were brought in. With the map on the wall constantly before them, a relief map was constructed to scale. When the surface was dry enough, it was painted with calcimine paint, the mountains brown, the valleys green, and the water courses blue. Tiny markers were placed beside each dam and on the more prominent peaks. Proud indeed were the little engineers who were permitted to show their knowledge of the water systems by tracing for a visitor the water from the farthest dam in the mountains to the storage reservoir in the city.

The other class took up the question of water in connection with health. The importance of pure water was emphasized and the question of what constitutes purity in water was considered. All this led naturally to the inquiry of the source of our water supply. From a trip to a nearby pumping station the children learned that the water stored there had travelled a long distance from the storage reservoirs. A study of conservation was taken up, together with a study of climate and rainfall. Maps of the county were consulted, nearby dams were visited, and the project from now on was carried on as by the other class. However, this class became more interested in the types of dams and the engineering problems. They decided to build a dam and reservoir of their own which would hold water.

The first attempts were made of clay and small boards, but these were not successful. Finally, the children hit upon using wood forms and concrete in making a model. A plan was made and followed. Two sand-tables were hooked together and the work was started. A small concrete gravity arch type dam was built of solid and reinforced concrete. The dirt back of the dam was shaped out to form a reservoir surrounded by mountains. The inside of the reservoir was cemented and when full held twelve buckets of water.

A small valve was built near the span and the water, due to its own pressure, was forced out of the lake through a conduit to a reservoir. At the other end of the sand-table the children built a miniature reservoir, pumping and distributing center like the one they had visited.

Thus in a small area these young engineers were able to bring water from a watershed area and distribute it to the miniature city.

The red letter day for the two projects was when Mr. Savage, the hydraulic engineer, came to see the work. Then "Little Engineer" stood beside "Big Engineer" and heard him say "Very good."

To complete the project both classes took up the study of the history of the water development in San Diego. Again literature from the water department gave much desired information. *The History of San Diego*, by Smythe, was of great help. So much interest was manifested in this study that it was decided to dramatize the story and present the play in the auditorium for the closing exercises. Both classes joined in this project. The little drama began with a scene depicting the Indians performing rites to invoke the powers above to give rain. Next, the Spaniards were seen asking the Indians to give them water. A street scene in old San Diego showing a town pump which derived its water from a well was acted out. The scene was made realistic by a hose concealed in the pump. The last act represented a celebration held when the first water was brought into the city from a distant dam. A street parade and speeches from leading citizens of the time were part of this closing scene.

We believe that the outcomes of the unit were very satisfactory. The academic subjects were closely bound with the projects; there were numerous oral and written reports; copious reading material had to be gone over and some arithmetical problems were connected with the construction of the map and the dam. The study of the dams led the children to investigate the Roman aqueducts and other foreign waterways. They derived from this study not only valuable information but also an appreciation of civic undertakings which will contribute to their development as citizens.

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INTRODUCTION TO CURRICULUM FOR HIGH SCHOOL IN AGRICULTURAL-UNIVERSITY CITY[1]

The ultimate aim of this study is to determine the courses of study and the subjects of each course in the High School of Champaign, Illinois.

The first part of the study will be to determine the objectives, aims, purposes, functions, and tendencies of education in general. After that the objectives of the high school will be decided, followed by objectives for the different courses and the selection of the courses; and, likewise, the objectives and subjects in the different courses will be determined.

There is no doubt that there are more curriculums built for the six-three-three plan, but the purpose is to make a curriculum workable in Champaign. At this time only the six-two-four curriculum plan can be used. However, the probability of Champaign eventually using the six-three-three plan should be kept in mind.

To arrive at conclusions it seems to the writer that there are many factors to be taken into consideration in the administration of building the curriculum. In the first place, there are legal requirements to be met that should not be overlooked. Secondly, there are the educational systems or institutions just above and below the senior high school to receive some consideration. Thirdly, there are the needs and the wishes of the community. And, finally, the educationists have formulated many criteria that should enter in and help determine the curriculum.

To the educationist the last of these four factors is perhaps the most significant. But, to the educationalist, the other three would be of deeper concern. Considering the four of equal value, it would stand to reason for the writer to treat the four different phases from the standpoint of the educationist, although there should not be made a marked distinction between "theory" and "practice." The two go hand-in-hand. . . . the writer believes that a graduate student must do some thinking for himself, especially in curriculum problems where there are differences of opinions not only between educationists and educationalists, but between individuals in each group. The writer should like to know Champaign and the system better before making a final report. Also, more study is necessary for handling the entire curriculum construction. This, of course, would require the assistance and coöperation of the whole faculty. An educationist or an expert in curriculum building should perhaps be called in for consultation.

There are a few educationists who think there need be no subjects as such. However, if this were attempted, the administration of the curriculum would be very difficult. Of course, the unit may be used.

[1] Charles W. Conrad recently completed a study in curriculum revision in the Graduate School, University of Illinois. In connection with his study he made a survey of the curriculum in use at Champaign, Illinois, a city of about 20,000 population and one of the cities in which the University is located. The community is in the heart of the corn belt of the Middle West. Besides taking counsel from members of the Board of Education, Superintendent, principals, and teachers connected with the Champaign system he consulted literature of these authors: Bobbitt, Bonser, Cameron, Clement, Charters, Counts, Cox, Harap, Hines, Hopkins, Judd, Starch, Thorndike, and Williams. Also these were consulted: Office of the Registrar and the High-school Visitor of the University of Illinois; offices of the Champaign County Superintendent of Schools and the Illinois State Superintendent of Public Instruction. Literature from these organizations was studied: North Central Association of Colleges and Secondary Schools, New England College Entrance Certificate Board, New York State Department of Education, and the Southern Association of Colleges and Secondary Schools. Including all these authorities on the subject, Conrad thinks that the investigator or the student has a right to think for himself and make his contribution. He believes that this sort of study is not a mere problem of research, where one borrows from the other, but that it is a case where a student may make contributions. Excerpts of Conrad's study are given here.—Editor.

This is similar to the subject—the only difference perhaps being in the name. The writer can hardly see how the curriculum could be managed otherwise.

. . . Someone may ask, "What about the extra-curricular activities?" The answer to this question is that there is no place left for extra-curricular activities. The writer assumes that all of those activities desired will find a place under some of the subjects in the different courses.

The determination of the courses and subjects will be made after considering the demands of the nation, state, universities, colleges, county, community, parents, and pupils. The curriculum should never be a finished product. Even after a curriculum is in operation, there are some parts of it always in need of revision. It should not be staple or a constant piece of work. It should be dynamic. Also, the writer should want to be in closer contact with the actual workings of the Champaign High School and should want to make further study. Even then all decisions, conclusions, suggestions, and recommendations should be tentative.

SUMMARY, CONCLUSIONS, RECOMMENDATIONS

A new curriculum is necessary for the High School, Champaign, Illinois. This is partially due to the rapid growth of the school and apparent change in community activities as well as demands made by the parents and pupils.

This change should be brought about gradually. The further probabilities of the change from the six-two-four plan to the six-three-three organization should be kept in mind.

The making of the new curriculum is a coöperative affair, involving the nation, state, county, community, parents, and pupils, also, the local university and elementary and junior high schools. The whole teaching personnel is included in the undertaking, from the teacher in the first grade to the Superintendent and Board of Education. The business and industrial people of all the classes, as well as the parents and pupils, are not to be overlooked.

The fact that the subject aeronautics received the highest number of votes by the students of the High School in a recent survey shows that the youth are thinking, and that this subject should be included in the curriculum.

The general educational high school objectives suggested for the Champaign High School in its curriculum building are: (a) the preservation and maintenance of the physical welfare and vitality of individuals; (b) preparation of individuals for participation in the desirable activities of citizenship; (c) the development in individuals of interest in activities and ideals of worthy family life; (d) the preparation of individuals to engage in wholesome leisure time and recreational activities; (e) the preparation of individuals to engage in worthy social, moral, and religious activities; (f) to acquaint individuals with the great array of modern vocations, to create wholesome attitudes toward workmen in various industries, and to prepare a limited number for choices, either temporary or permanent, in vocations.

Objectives for different subjects in the Champaign High School should be: (a) in terms of the great fundamental "life-interests" of individuals; (b) in terms of the classroom objectives or aims to be realized under the different departments of the high school; (c) to represent amplified or subsumed aspects of major educational aims or of the great "life-interests."

These courses of study are suggested for the Champaign High School: academic or college preparatory, commercial, industrial, and agricultural.

CHARLES W. CONRAD,
Chicago, Ill.

EDITORIAL COMMENT AND REPORT

THE ESSENTIAL TASK

Necessity is still the mother of invention. With hard times has come the usual chorus of reformers, each with his certain and sure remedy for social ills. To be in the fashion one must raise his voice in favor of a social planning. It is necessary to decide what sort of society we should like to have and then take the necessary steps to secure it. Naturally the schools are expected to play a large part in this. Children of tender age must face current social problems and learn how to solve them through coöperative effort. By means of a study of the past they may quickly formulate for themselves the principles of sound social philosophy and thus be in a position to correct the mistakes of the present generation of grown-ups.

There is, however, an obstacle in the way of this onward march to Utopia, namely, human nature. If we may believe the anthropologists, this has remained essentially unchanged for at least five thousand years. Its most prominent manifestation appears to be selfishness. In early years this is quite unabashed. "I want that! Gimme that!" howls the small boy. Later he learns to dissimulate. He becomes polite. He conceals his real motives and at times attains to genuine altruism, at least in certain aspects of life. But selfish he was and selfish he remains.

He may and often does deceive himself as to his desires. He tells himself that he is struggling to benefit others when in fact he is really seeking to gratify his own ambitions. Even when he seems most self-sacrificing he is often most self-seeking. He is like Diogenes wiping his dirty feet on Plato's costly rugs and exclaiming, "Thus do I trample on thy pride, O Plato!" only to be told, "and with how much greater pride, O Diogenes!"

Emerson remarks in his *Fortune of the Republic* that "water cannot rise higher than the tap." He proceeds to argue for enlightened leadership as the necessary condition of social progress. But of course the leaders must have followers. A dictatorial oligarchy actuated mainly by hatred of enemies and love of power was farthest from his thoughts. Followers who choose the better way freely and intelligently are educated. They know what is right and possess the will to do it.

This is the essential factor. When some twentieth-century Horace Mann arises to show us how public schools can transform human nature already predatory and self-centered into persons actuated by genuine love of their fellowmen, we shall have the key to the problem. Meanwhile we shall be continually disappointed. The ideal society we build up in imagination will never exist. What is needed is not so much social planning on the grand scale as the development of moral character in the individual. Given a race of men devoted wholeheartedly to the improvement of human welfare, the question as to what precise form collective life shall take becomes relatively unimportant. The place to begin the making over of society is in the infancy of those just entering upon it. No preoccupation with schemes for teaching citizenship to children whose characters are already set should be allowed to blind us to this fact.

J. F. H.

BETTER SELECTION OF TEACHERS

It is refreshing to find a number of teacher-training institutions attacking at last the problem of selective admission. De-

spite the pressing nature and obvious importance of this problem in teacher-training institutions, these various institutions have seemed a bit loath to take action. The prestige of large student bodies and the use of large numbers in pleading with legislatures for funds have often outweighed professional considerations. The unfortunate political connections of so many normal schools have also interfered. It is perhaps for the immediate preceding reason that the municipal teachers' colleges seem to be moving a bit more rapidly than the state institutions.

Among a dozen or more vital factors in the selection of prospective teachers the following would seem to stand out as most important: guidance in high school; scholastic standing in high school; recommendation of high school faculty; psychological test; personal interviews before entrance; constant supervision and diagnosis during training; and follow-up while in actual service.

From this selective list we may further choose three which are of unusual importance and at the same time are often neglected because of obvious difficulties involved. These are: guidance in high school; personal contacts with normal school faculties prior to entrance; and follow-up. Much progress has been made, however, and a few schools are doing outstanding work. We may mention as an example the excellent progress which the Kansas City Teachers College, under the fine leadership of President G. W. Diemer, has made along lines that are usually neglected.

This institution, like all municipal teachers' colleges, is able to secure excellent coöperation in the city high schools because all effort may be coördinated through the office of the city superintendent. In this case high school guidance actually begins during the high school sophomore year. The students interested in teaching fill in record blanks and are for the next three years constantly in touch with a high school teacher who is intimately informed concerning all phases of these students' activities. This gives three long years during which those unfit for teaching may be detected and discouraged. Only those in the upper half of the graduating class are eligible to apply for entrance, and even these must be personally interviewed at some length by a member of the teachers' college faculty. President Diemer fully realizes that mistakes in judgment may be made, but he feels they are greatly minimized by the period of time involved and the many personal contacts. Furthermore, all students in the lower quartile during the freshman and sophomore years in the college are subjected to special diagnostic attention given by the entire faculty.

Finally, a very definite and detailed system of in-service supervision is exercised after the student has found a position in the Kansas City schools.

W. H. B.

STATISTICS HAVE HUMAN INTEREST

"Dry as dust"—that is the way statistics is often characterized. But that the subject has human interest can easily be shown.

Consider the mean. Perhaps the original glamor of the mean wears off after one has computed several hundred of them, but the "first fine careless rapture" can be recaptured by exploring the possibilities of the mean further. Just think of the human interest involved in finding the standard deviation of a mean disposition!

A median sounds quite mysterious to the uninitiated. One thinks of mediums who communicate with spirits. Unfortunately, there is a moment of awful disillu-

sionment when, in an elementary course in statistics, one discovers that the median is not a person but a point, and, worse still, that it is a definite point—not one of those fascinating hypothetical elusive points of higher mathematics which waver away from one toward infinity like a will-o'-the-wisp.

The familiar frequency distribution also is not without human interest when you consider the various items which have been made into frequency tables—skulls of Chinese pigs, hours of sleep, and attendance at movies. Rage, love, laughter, fear, and hate—the elemental ingredients of human interest—have all been put into frequency tables.

Deviations always have human interest. Deviations are news. A reporter who does not recognize deviations has no nose for news. He is like the young man who was told to cover the wedding of a prominent society girl. When he returned to the office the editor asked, "Did you get the story?" "No," he said. "There wasn't any story. The bridegroom didn't come." This reporter just did not recognize the human interest in deviations from the usual happenings.

What a musical sound "coefficient of correlation" has! It makes a sound like a babbling brook. It doesn't make a sound like a statistic! The coefficient of correlation shows relationships. And what is more interesting than one's relations—the poor relations and the rich relations?

Shakespeare, you remember, wrote a play called *The Comedy of Errors.* How increasingly fascinating would have been *A Comedy of Probable Errors!*

The dramatic possibilities of statistics are still unexplored.

RUTH STRANG,
Teachers College,
Columbia University.

THE LOS ANGELES MEETING

A general account of the summer meeting of the National Education Association was published in *School and Society* under date of July 25. The attendance was the largest ever, the city outdid itself in attention to visitors, and a right good time was had by all. The next session will be held at Atlantic City.

The Department of Supervisors and Directors of Instruction conducted two half-day meetings, with the president, Miss Elizabeth Hall of Minneapolis, in the chair. The first session was devoted to the general topic, "Problems in the Attempt to Articulate the Supervision of a Selected Subject-matter Field Within the Field of General Supervision." The speakers on this theme were as follows: Lena A. Shaw, Assistant Director of Handwriting in Detroit, Michigan; George D. Taylor, Principal of School No. 27 in Rochester, New York; and Ellen Nystrom, Supervisor of Handwriting in Minneapolis, Minnesota.

At the second session the topic was, "Problems in the Supervision of Rural School Districts and Small School Systems." There were four speakers, as follows: Kate V. Wofford, of Laurens, South Carolina; Anna Swenson, Director of Teacher Training Departments, State of Minnesota; Roy Perkins Snyder, Chief of the Rural Education Bureau, State of New York; and Helen Heffernan, Chief of the Division of Rural Education, State of California.

The papers and addresses presented by these speakers will appear in forthcoming numbers of *Educational Method.*

SCALE FOR SCHOOL PUBLICATIONS

In a talk given recently to grammar-grade classes at Morton Street School, Max J. Herzberg, supervisor of English, suggested a scale by which students might themselves rate a school magazine; and

he has since added several items applicable especially to school newspapers. This scale follows:

1. How far does this issue truly represent the spirit and the achievement of your school?

2. How many individuals have had a chance to express themselves? Have they done so sincerely and interestingly? Do the same writers appear too frequently in the various issues of this magazine?

3. How varied is this material—stories, poems, sketches, plays, articles and features, news items, editorials, humor?

4. How far is the material directly related to the life of your school and that of the pupils in it? Are there stories relating school episodes, stories of life in the vicinity of the school and in Newark generally, poems about yourselves, features about matters you are vitally interested in, humor picked up in your class-rooms and corridors instead of being clipped with a scissors, live editorials?

5. Is the material well written? Is it expressed as pithily as possible? Are there a large number of typographical errors?

6. Is the material effectively arranged? Is it attractively presented? Are there good illustrations, well-drawn cartoons, a pleasing cover design? Is the whole appearance of the magazine artistic?

*7. Does the issue give you news of school activities that you might be unaware of had you not read it?[1]

*8. Does the issue show due proportion in the emphasis it gives to scholarship and to athletics?

*9. Is the news in this issue timely and current? Are future events announced in good time? Do you feel that those who write your paper are aware of what goes on in the school?

*10. Is the editorial policy constructive, honest, and loyal?

11. Is an appeal made in this magazine or newspaper to all members of the school body? Does everyone like to read it? If not, is it your fault or the fault of the magazine or the newspaper?

12. Will your parents like to read this publication? Will it tell them things about your school that they ought to know or will enjoy reading about?

13. Will outsiders get an honest and pleasing impression of your school? Does the issue add to the honor and good name of your school?

14. Do you care to put this issue aside and preserve it permanently because you like and value it so much?

—Newark School Bulletin.

[1] Items 7, 8, 9, and 10 apply particularly to school newspapers.

THE MAYVILLE, NORTH DAKOTA, CONFERENCE ON ELEMENTARY EDUCATION

Another indication of the new spirit which is growing in American normal schools and teachers' colleges is to be seen in the "First Annual Conference of Elementary Education," held at the Mayville (North Dakota) Teachers College, July 8-10. It was organized and administered by President C. C. Swain, Doctor Frank L. Wells, and Professor A. C. Berg. Invitations were sent to all superintendents, principals, and elementary supervisors in the state, many of whom responded, joining with the summer school students to make a conference audience of over 500 people.

The keynote of the meeting is to be found in this paragraph from the invitation:

> The teacher in the elementary grades is now facing a situation which makes it imperative that she possess qualifications decidedly better than those possessed by the ordinary teacher or those specified by the State as the minimum requirement for certification. Undoubtedly there is an oversupply of teachers, but there is not, and never will be, an oversupply of *superior* teachers. The far-seeing teacher will anticipate the demand that will inevitably come for better qualifications in those seeking teaching positions. She will now prepare herself to render a service that those with only the minimum or average preparation cannot give.

The first of three days was devoted to showing a collection of fifteen educational talking pictures, including the well-known films by Buswell, Gates, Bode, Kilpatrick, Mearns, and others. The second day was devoted wholly to elementary school method. The topics presented by Doctor William H. Burton of Chicago included "A Theory of Method," "Scientific Education and the Classroom Teacher," and "Some Experimental Studies in the Field of Method." This session ended in a round table vigorously participated in by many visitors and students. The third day was given over to supervision and the teaching of the common branches presented by Doctor C. C. Schmidt of the University of North Dakota, assisted by Doctor Burton. Also upon this third day a series of six specialized round tables were held on such problems as "Units of Work in the Primary Grades," presented by Miss Helen Laurie, who goes this year from her unique position in St. Louis County, Missouri, to Seattle; "Organizing the Class to Meet the Needs of Individual Pupils," by Doctor Guy L. Hilleboe of the State Teachers College of Albany, New York; and "New Points of View in Arithmetic," by Doctor Frank L. Wells.

The whole emphasis was confined to the problems of the elementary field, which too often is neglected at such meetings. It is hoped to have two or more similar conferences and then to branch out to related fields. The Mayville institution is to be congratulated on its exercising leadership in a difficult field.

THE NEW YORK PRINCIPALS MEET IN BUFFALO

The second annual Spring Conference of Elementary School Principals was held on April 24 and 25 in the New York State College for Teachers at Buffalo. The general theme of the Conference was: "The Principal as a Supervisor."

Mr. Hoyt Smith, President of the New York State Association of Elementary School Principals, acted as chairman of the first conference meeting, at which time the delegates were addressed by Dr. Oscar Hertzberg, Professor of Psychology, State Teachers College, Buffalo.

The afternoon session was presided over by Mr. William C. Fayette, President of the Buffalo Elementary School Principals Association, and was addressed by Miss Bess Goodykoontz, Assistant Commissioner of Education, Bureau of Education, Washington, D. C. In connection with her talk on "Needed Research in Elementary Education," Miss Goodykoontz asked coöperation in some "Proposed Studies of Pupils in Intermediate Grades" to show backgrounds which have been factors in regularity of progress, to determine out-of-school activities of intermediate grade pupils, also in-school activities, and lastly to determine the administrative arrangement for intermediate grades.

At the Saturday morning session, Mr. Berten Bean, Secretary of the New York State Association of Elementary School Principals, served as chairman. Dr. Earl Cranston, Professor of History, State Teachers College, Buffalo, addressed this meeting on: "The Necessity for Content Background," which tended to compensate for the emphasis which is frequently placed on method by school administrators.

Three sessions of the conference were devoted to group meetings at which the different aspects of supervision were discussed, namely, "Supervision of Content Subjects," "Supervision of Special Subjects," and "Supervision of the Skill Subjects." The outline for group leaders prepared by Mr. C. A. Pugsley, Professor of Elementary School Administration, State Teachers College, Buffalo, and chairman of the conference, was as follows:

1. What shall the supervisor set up as satisfactory aims in the teaching of this subject?
2. How shall the supervisor determine whether or not the subject matter has been properly selected?
3. What methods of instruction shall the supervisor regard as satisfactory in the teaching of this subject?
4. How can the supervisor determine whether or not the results are satisfactory?
5. How can the supervisor help the teacher to improve her technique in this subject?

Leaders who presided at the group meetings discussing the supervision of the content subjects were as follows: Mr. E. P. Smith, State Supervisor of History, on "Supervision of History and Civics"; Miss I. Louise Moran, Supervisor of Geography, Geneseo Normal School, on "Supervision of Geography"; Miss A. Nelson, Principal of Willard St. School, Jamestown, on "Supervision of Elementary Science"; Dr. Charles H. Keene, Professor of Hygiene and Physical Education, University of Buffalo, on "Supervision of Health."

Of the Special Subjects: Mr. C. B. Bradley, Head of Art Department, State Teachers College, Buffalo, on "Supervision of Art"; Mr. Frank D. Owen, Director of Music, Batavia, on "Supervision of Music"; Mrs. Isadore Simmons, Supervisor of English, Hamburg, on "Supervision of Literature"; Mr. Irving C. Perkins, Director of Vocational Education, State Teachers College, Buffalo, on "Supervision of Industrial Arts"; and Miss Mabel Orr, Principal of Alexander Hamilton School, Rochester, New York, on "Supervision of Home Economics."

Of the Skill Subjects: Mr. Clifford Gould, General Supervisor, Kenmore, on "Supervision of Reading"; Miss Grace A. Allen, Assistant Director of Training, State Teachers College, Buffalo, on "Supervision of Language"; Miss Caroline Bullock, Principal of Cleveland Avenue School, Niagara Falls, on "Supervision of Writing and Spelling"; and Mr. George D. Taylor, Vice-President of the New York State Association of Elementary School Principals, on "Supervision of Arithmetic."

A luncheon in the College cafeteria, followed by Dr. J. Cayce Morrison's address, "The Principal as a Supervisor," terminated the conference.

The general impression brought to bear upon the delegates by conference leaders was the need for the principal functioning as a supervisor. To be able to judge his teachers according to the effectiveness of objectives, subject matter employed, method of instruction, and results are the duties of the principal in the capacity of a supervisor. As was brought out in one of the group conferences, the principal cannot be only a passive observer, he must be a constructive critic. He must be a producer of lessons presented for his teachers as well as a consumer of lessons presented by his teachers. Coöperation with his teachers and sympathetic understanding of his teachers are essential to making the profession of teaching a more efficient one.

The preliminary work of this conference and the management of the routine work during sessions was done by the students of Mr. Pugsley's class in Community Relations and School Publicity, under the leadership of Miss Grace Kline. This meant a personal gain for the students as well as rendering a definite service to the conference.

THE READER'S GUIDE

A REAL CONTRIBUTION TO TEACHER-EDUCATION

In few fields of education is there such lack of organized materials as in that of the supervision of student teaching. This fact makes Dr. Mead's contribution most timely. *Supervised Student Teaching*[1] is the first comprehensive treatise dealing with the problems of student teaching and the organization and administration of the training or laboratory school. It represents sixteen years of studying, planning, collecting data, and organizing the material.

The relation of theory and practice in the professional education of teachers forms the core around which the author develops the three parts of his book. Part One deals with the basic conceptions, definition of problems, the origin of student teaching, the character and implications of objectives and outcomes, the values and needs of student teaching, and the functions of observation and participation as factors in student teaching.

Part Two deals with actual practice and presents an analysis of the activities which make up student teaching. This is one of the most valuable sections of the book. The author has assembled here all of the important studies which have been made in this field. The works of Gray, Pryor, Waples, Charters, Whitney, Sprague, Henderson, Mossman, Blackhurst, and many others are carefully presented. The analysis of the conditioning factors affecting student teaching is most timely. The most important of these factors are: the student teacher's physical status, previous preparation, attitudes, personal traits, native intelligence, and the relationships between the department of training and the other departments in the college.

Part Three deals with the important administrative phases of student teaching, such as the selection and assignment of student teachers, the amount and kind of laboratory work, the evaluation of student teaching, the staff of the training school, the legal status of student teaching, buildings and equipment. All of these phases are treated in such detail that it is impossible to do justice to them in a brief review such as this. The one thing that most impressed the reviewer was the scientific attitude and method of the author in presenting his material. It is gratifying to know that we have as much objective data in this field as is presented here. The workers in this phase of teacher-education owe Dr. Mead a debt of gratitude for his careful and painstaking method of assembling this most valuable material.

The reviewer does not wish to give the impression that this book is merely a compilation of the studies of other people. The treatise is one connected whole, based upon a clear-cut philosophy and psychology of education. The author constantly thinks of supervised student teaching as one aspect, part, or period in the professional education of teachers. The teacher-training institution "must center its organization, its plans, its teacher-preparing curricula, its building facilities, and the attention of its entire staff upon this work." It might be questioned whether the author is justified in thinking of the laboratory school as the most important factor in the education of teachers. The reviewer does

[1] *Supervised Student Teaching.* By Arthur R. Mead. Johnson Publishing Company, 1930.

not believe this is Dr. Mead's intention but rather to conceive of the training school as one of the departments in a teacher-training institution which should have equal recognition with the academic and the professional departments. It is not a question in the mind of the reviewer as to which is the most important; they are all of equal importance. The problem is one of properly correlating these three aspects of teacher-education. The author lists six conditions which must be met if the college organization is to insure the highest type of laboratory or training school work: 1. The college must be functionally related to the state control of teacher-preparation. 2. The financial aspects of administration as to securing support and apportioning funds must be functions of persons whose chief interests are the educational objectives of the college. 3. Laboratory school work (observation, participation, student-teaching) and laboratory school staffs must be on a par with theory and subject-matter work and staffs as to quality of work, rank of staff, and salaries and qualifications of staff. 4. Permanent and continuous provision for securing integration of theory, subject matter, and laboratory school work must exist. 5. There must be diversified types of laboratory schools to provide needed facilities. 6. Chief administrative officers must have the coöperation of a small, selected group of the college staff, the Advisory Administrative Council. Besides these, the other functions of appointment—promotion, supervision, establishment of curricula, etc.—must obtain.

The index is most interesting in that it may be said to represent a "little Who's Who" in the field of teacher-training. This may be a slight exaggeration if the reader does not find his name there. Mine by chance was there.

W. D. ARMENTROUT.

READING AND THE TEACHING OF READING

Professor Patterson has provided the normal school student with a comprehensive and well-organized exposition of accepted theory concerning the teaching of reading in the primary grades, the intermediate grades, and the junior high school.[2] By means of footnotes, references in the exercises for study, and a bibliography at the end, he has called attention to a large number of discussions, reports of investigations, and texts in this field. By the use of stenographic reports and descriptions of lessons he has sought to aid the student in making application of the theory that he has presented. His book as a whole will doubtless take its place as one of the better handbooks for students of reading method. Instructors seeking suggestions as to "what to have the students do" will find the assignments appended to each chapter highly useful.

The student will probably get the impression that there exists a much larger body of unchallenged theory as to the teaching of reading than actually exists. Saying a thing over and over does not make it so, though it often persuades the hearer to unquestioning belief. Advising classroom teachers to administer standardized reading tests to their classes may be cited as an example. Standardized tests may and no doubt often do reveal central tendencies of groups, but they seldom afford much information as to the status of individuals. Few of the so-called tests of reading, moreover, are fitted to test essential abilities in reading at all. The most widely advertised test of "oral reading," for example, is merely a test of pronunciation.

In this book the important topic of diagnosis of individual difficulties and devising of appropriate treatment receives little

[2] *Teaching the Child to Read.* By Samuel W. Patterson. Doubleday, Doran and Co., 1930.

emphasis. This is a mistake. Adaptation of work in reading requires more attention to individual needs than is implied in the quotations from authorities in regard to phonics. Provision of abundant opportunity for children to read what they like is probably more important than the conduct of "recitations" in the subject. As for literature as a subject of study in junior high schools, we should expect not a few pages but a volume in itself.

The task undertaken by Misses Storm and Smith was less extensive and hence they found it possible to be more specific.[3] Even so they begin with a history of reading methods and show a tendency to the encyclopedic. Their chief authorities are the same as those of Professor Patterson but they content themselves with comparatively few titles. Huey's very important work does not seem to have come to their attention. Thorndike's *Reading as Reasoning*, however, is cited, though its full significance is not brought out.

The primary teacher will find here a well-arranged summary of accepted doctrine, together with a good deal of concrete illustration. This has been collected for the most part in the Laboratory School of the University of Chicago, though a number of photographs of pupils at work in the Trenton Normal School are also included. One of these shows a group of small victims with pencils poised in air, about to take a "test" in the manner of the period. It would be interesting to know what the children are thinking about.

Professor Gates supplements his two books on reading already published with a third in which he reports additional studies.[4] At the beginning of the second part of the new volume he outlines a reading program which he believes is justified by the studies summarized and which he has attempted to a certain extent to make possible by the publication of pupils' "work books."

Most of the principles set forth have been accepted in theory by good students of reading for many years. They have not been supported in every case by adequate scientific data and they have often been violated in practice. Whether the use of so-called work books will in the long run prove advisable is open to question. At the best the situations to which the pupil is called upon to respond by means of them are more or less artificial. One does not often in "real life" read a paragraph in order to be able to say which of three following statements best sums up the meaning. There is a possibility that our well-meant efforts to make education scientific may result at times in artificialities worse than the evils they were meant to correct. Education is not a simple process and no ingenuity can make it so.

The references and exercises in the book indicate that it is intended for use as a text.

The adult who wishes to improve his reading will find Professor Pitkin an entertaining guide.[5] Most of us read for three purposes, he declares: to learn, to have fun, and to accumulate information as to what is going on in the world. We waste a good deal of time at it, however, and he undertakes to help in overcoming this. His suggestions are interesting and show considerable familiarity with the results of scientific study in the field.

A PRIMER OF THE NEW RUSSIA

American teachers have every reason to be interested in the Russian experiment as have other citizens. They may well, in addi-

[3] *Reading Activities in the Primary Grades.* By Grace E. Storm and Nila B. Smith. Ginn and Co., 1930.

[4] *Interest and Ability in Reading.* By Arthur I. Gates. Macmillan Company, 1930.

[5] *The Art of Rapid Reading.* By Walter B. Pitkin. McGraw-Hill Book Company, 1929.

tion, give more than passing thought to the educational means that are being employed to insure, if possible, its success.

One of the most striking is the publication of a school text devoted to the explanation and defense of the "Five-Year Plan." This is called *New Russia's Primer* in the American translation and it has achieved the extraordinary distinction of being chosen by one of the popular book clubs as a "book of the month."[6] Certainly no school book by our own writers has achieved such an honor. This one deserves the notice it is receiving.

As the American editor, Professor Counts, says, "Practically every page carries the marks of genius." The author, M. Ilin, is a young Soviet engineer who has written several other successful books for children. In this one he tells the "Story of the Great Plan." He does it graphically, strikingly, memorably, and yet clearly and simply. He is forceful and he is convincing. Young Russia will thrill to the adventure so well set forth and will develop enthusiasm for their national project.

The theme is, of course, economic throughout. After a brief introduction we come to a comparison of what happens when a country has no plan with what happens when it does. Just now, when we are suffering from a depression following on the heels of a boom, this appears to be a telling argument. After this the possibilities of harnessing water, wind, and electricity to furnish power for work in metal, transportation, and all the other aspects of an industrial civilization are set forth. M. Ilin is prophesying and he does so with zeal and art. However skeptical American readers may be, they will not find his "primer" dull.

PSYCHOLOGY FOR TEACHERS IN TRAINING

The series of basal texts for the training of secondary teachers edited by Professor Monroe, of the University of Illinois, has been completed by the publication of a volume on educational psychology. A volume of problems in this subject has been added for good measure.[7]

The range of topics included is very wide. In addition to chapters on learning, transfer, individual differences, and the like, there are chapters on the characteristics of children at different levels, psychology of elementary school subjects, mental hygiene, and how to study pupils. A course based upon this text would, therefore, be either very superficial or very heavy, depending upon how much collateral reading and study the class should do. It is manifestly impossible to include in a single book, even of more than six hundred pages, sufficient scientific data to enable the student to get more than a passing acquaintance with so many subjects of such far-reaching importance. References to authorities are freely given in the text, and it may reasonably be inferred that the authors intended to provide an outline to be filled in rather than a definitive body of information. The space available for presentation of scientific facts is curtailed somewhat by the attempts of the writers to make the application of principles to teaching as they go along. This book, like so many others on the subject, is to a considerable extent a treatise on method. How far this should be the case is doubtful. It is certainly possible to confuse the student as to whether he is dealing with ascertained facts or only good advice based upon per-

[6] *New Russia's Primer.* By M. Ilin. Translated from the Russian by George S. Counts and Nucia P. Lodge. Houghton Mifflin Company, 1931.

[7] *Educational Psychology.* By Walter S. Monroe, James C. DeVoss, and George W. Reagan. *Problems in Educational Psychology.* By Walter J. Gifford and Clyde P. Shorts. Doubleday, Doran and Company, 1930 and 1931.

sonal experience. It sometimes appears that attempts to carry water on both shoulders are unwise. The fact that the authors have elsewhere presented the technique of teaching would seem to have made it desirable to stick pretty closely to psychology in this case.

The volume concerned with problems and sources, which Messrs. Gifford and Shorts have compiled, follows rather closely the order of treatment adopted in the book mentioned above. The phrasing is in some respects different and the range of topics considerably less. The references and excerpts are frequently from writers on method rather than from recognized psychologists. This may prove to be an advantage in cases in which a large portion of the time of a psychology course is to be given to discussion of practical applications. While designed to accompany the text written by Monroe, DeVoss, and Reagan, this collection may be used with any standard work. Together these two volumes in the Monroe series provide the student with over 1300 pages of material.

SIGNIFICANT ARTICLES

ON STUDENT TEACHING

Educational Administration and Supervision for May was given over in the main to a report of the Conference of Supervisors of Student Teaching, which was held at Detroit in February. The principal papers were read by Messrs. Engleman, of Kent (Ohio) State Teachers College, and Bagley, of Teachers College (Columbia). The former dealt with "The Place of Objective Standards in Judging Student Teaching" and the latter with "The Place of Applied Philosophy in Judging Student Teaching." The two papers were complementary; no essential differences of opinion developed. The first emphasized the present shortcomings of objective tests but argued that we should use what we have and seek improvement. The second raised in particular the issue of discipline, holding that since student teachers cannot in fact have the authority necessary for discipline, they should not have responsibility for it. In general the writer holds that weak discipline in schools is a menace to our national life.

THE ELEMENTARY SCHOOL NEWSPAPER

An excellent study of present practice in the conduct of newspapers in elementary schools appeared in the *Elementary School Journal* for June. The writers, Paul R. Pierce and Tobey R. Goodman, of the Gladstone School in Chicago, report the results of an investigation instituted by the journalism club of their school. Thirty-five representative papers were collected and compared as to such matters as auspices of publication, method of financing, size, contents. Elementary school papers are sometimes controlled by the pupils and sometimes by the parents. No central tendencies as to form and content appeared. The writers think that standards should be set for guidance.

DEVICES FOR TEACHER RATING

"An Analysis of Fifty-Seven Devices for Rating Teaching," made by Charles W. Knudsen and Stella Stephens, appeared in *Peabody Journal of Education* for July. Copies of the rating devices suggested in almost two hundred articles were made and studied as to authorship, purpose, method of derivation, evidence of validity and reliability, type, and items included. The traits mentioned were classed under appropriate heads and their frequency indicated. Thus "voice" tops the list under "Personal Equipment" and "adequate scholarship" under "Professional Equipment." The article concludes with a bibliography of fifty-seven entries, by means of which the reader may, if he likes, ex-

amine any or all of the devices mentioned for himself. The writers make no attempt to indicate the relative value of the devices.

WHOLESOME LIVING

In accordance with its editorial policy, *Junior-Senior High School Clearing House* for June is chiefly a symposium on "Wholesome Living," directed by Dean Willis L. Uhl, of the University of Washington. The excellence of the contributions makes selection difficult. The opening paper, by Professor Hullfish, of Ohio State University, presents "The Moral Life as Wholesome Living." He quotes with approval Otto's phrase, "many of our concepts have gone dead on us," and declares that we cannot hope to develop in children and young people ideals of conduct that are no longer upheld in practice by their elders. What is needed, he thinks, is a principle of adjustment that may be applied when conflicts arise. "Moral life may then be built up in the process of living itself." The schools must train the pupils to see that morality is, after all, but the application of intelligence to the control of life.

CHILDHOOD EDUCATION

The Cleveland Convention of the Association for Childhood Education is reported in the journal of the society for June. The topic most prominent was "Continuity in Curricula" and the most useful report that by Miss Grace Langdon and Professor Patty Smith Hill on the use of a question sheet for the study of the procedures followed in a given class or school. Twenty-four questions were included in the scheme, ranging from a question on medical inspection to one on the use of progress records. Results obtained from one hundred thirty-two teachers of younger children were collated. The data so obtained were then presented both in tabular form and in summary. From this paper the reader can obtain a comprehensive view of present practice in nursery school, kindergarten, and first grade in regard to care for the physical well-being of the children.

SUPERVISION TENDS TO BE TOO MECHANICAL

In *School Executives Magazine* for August, John Carr Duff sounds a warning against permitting supervision to become mechanical. He refers in particular to the *Second Yearbook of the Department of Supervisors and Directors of Instruction* in which, he thinks, an attempt was made to conceive of supervision as an impersonal science. In contrast to this he cites Proctor's study of three hundred actual cases, in which it appeared that the pressing need on the part of the teacher was for the awakening of a strong urge "to do a better job." The writer thinks that supervision as it is practiced is greatly in need of reform. At present it lags behind the best of current educational theory and the best classroom teaching as well. In view of the fact that the period of training for teaching is at present all too short, we must depend upon supervision to assist the beginner to attain something like mastery of his craft.

THE NEW BOOKS

Culture and Education in America. By Harold Rugg. New York: Harcourt, Brace and Co., 1931. Pp. 404. $2.75.

Magazine Making. By John Bakeless. New York: Viking Press, 1931. Pp. 323. $3.00.

Greatness Passing By—Stories to Tell to Boys and Girls. By Hulda Niebuhr. New York: Scribner's Sons, 1931. Pp. 160. $1.50.

Teachers College, Columbia University, Contributions to Education, 1931: No. 431, *Progress in Adjusting Differences of Amount of Educational Opportunity*

Offered Under the County Unit Systems of Maryland and Utah, by L. John Nuttall; pp. 105; $1.50. No. 442, *Content and Form of Original Compositions Dictated by Children from Five to Eight Years of Age*, by Jean Betzner; pp. 53; $1.50. No. 450, *Determination of the Interrelations, Partial and Multiple, Between Various Anthropometric Measurements of College Women*, by Mary L. Boillin; pp. 63; $1.50. No. 452, *A Critical Study of Homogeneous Grouping*, by Alice V. Keliher; pp. 165; $1.75. No. 453, *Legal Limitations on Bonds and Taxation for Public School Buildings*, by James H. Smith; pp. 117; $1.50. No. 454, *Variability in Continuation School Populations*, by Anthony M. Goldberger; pp. 52; $1.50. No. 456, *Reserve Funds in Public School Finance*, by Frank C. Ketler; pp. 77; $1.50. No. 457, *A Study of Homogeneous Grouping*, by Marvin Y. Burr; pp. 69; $1.50. No. 458, *Measuring Personality Adjustment in Children Nine to Thirteen Years of Age*, by Carl R. Rogers; pp. 107; $1.50. No. 459, *A Basis for Building a Course in Economics of the Home*, by Frances H. Leighton; pp. 114; $1.50. No. 460, *The Effective Use of Curriculum Materials*, by Florence Stratemeyer; pp. 161; $1.75. No. 461, *Dependability in Philosophy of Education*, by Ray Lepley; pp. 96; $1.50. No. 464, *Capital Outlay in Relation to a State's Minimum Educational Program*, by Foster E. Grosnickle; pp. 67; $1.50.

Everyday Spelling. By Henry Suzzallo, Henry C. Pearson, and Milo B. Hillegas. New York: American Book Co., 1931. First Book, pp. 142. Second Book, pp. 150.

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The Psychology of the Common Branches. By William H. Pyle. Baltimore: Warwick and York, 1930. Pp. 381. $2.10.

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American High Schools and Vocational Schools in 1960. By David Snedden. New York: Teachers College, Columbia University, 1931. Pp. 122. $1.50.

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Dan-Hur and the First Farmers. By William L. Nida. Chicago: Laidlaw Brothers, 1931. Pp. 256. Illus.

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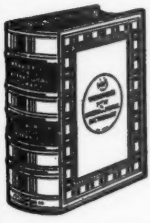

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